

UNIVERSITY OF MINNESOTA



Extension

C L A S S E S

1993-94

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TENSION

Save your time! Before calling for information, check the Index in the back of this Bulletin

Extension Classes Information

101 Wesbrook Hall
University of Minnesota
77 Pleasant Street S.E.
Minneapolis, Minnesota 55455
Telephone 625-3333

Counseling and Program Advising

314 Nolte Center
University of Minnesota
315 Pillsbury Drive S.E.
Minneapolis, Minnesota 55455
Telephone 625-2500

Extension Classes Information and Registration Offices are generally open Monday through Thursday, 8 a.m. to 8 p.m., and Friday from 8 a.m. to 4:30 p.m. (For exceptions, see Office Hours, page 9)

Where to call:

Extension phone numbers

Cancellation Information	625-3333
Compleat Scholar/Practical Scholar	624-8880
Continuing Education for Women	624-5267
Correspondence Courses (Independent Study)	624-0000
Counseling	625-2500
Degrees and Certificates	625-2500
Director	624-4062
Extension Bulletin Request	624-2388
Extension Records (Williamson Hall)	625-5333
General information (extension classes)	625-3333
Health Service	625-8400
Info Newsletter	624-2388
Instructor Telephone Numbers	625-3333
Macphail Center	627-4020
Maps (Campus or Parking)	624-2388
Registration	625-3333
Registration Forms	624-2388
Student Board	626-8501
Television Classes	624-0000
Veterans Information	624-3341

Bookstores phone numbers

Books Underground (St. Paul)	624-9200
Health Sciences	625-8600
Minnesota Book Center (Williamson Hall, East Bank)	625-6000
West Bank (Smith)	625-3000

University phone numbers

Recreational Facilities	625-6800
Athletic Ticket Office	624-8080
Concerts and Lectures	624-2345
Day School (College) Bulletins	625-2006
Libraries	624-4552
University Information	625-5000
University Police	624-3550
University Theatre	625-4001

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Bulletin Use

The contents of this bulletin and other University bulletins, publications, or announcements are subject to change without notice. University offices can provide current information about possible changes.

Tuition Policy

The University of Minnesota has a policy for the way different groups of students pay for the courses they take: resident student and non-resident student. In addition, students taking 5xxx-level courses for graduate credit, or 8xxx-level courses, pay a separate graduate credit resident or non-resident rate. Each credit option is listed with each course in this bulletin as applicable. **For complete information, read the boxed section on How to Determine Tuition on page 22.**



About the paper used in this bulletin: Butte des Morts Recycled Book contains 50% to 70% deinked recycled fiber, of which 10% is guaranteed post-consumer waste.

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About the bulletin cover

This year's original cover art is the work of Twin Cities designer and illustrator Brad Norr. It is one in a series of several publications covers Norr is doing for Continuing Education and Extension. Norr says the art is intended to present both the academic and idealized aspects associated with college and with continuing education. By combining fine art and commercial art techniques, the result is "a hybrid image that's not quite photo, design, or illustration, but all three," Norr says. We in CEE are very pleased with the exciting work he has created for us this year.

9 Ways to earn credit at the University of Minnesota

There are many ways you can continue your education and receive credit for knowledge and skills gained in the classroom and outside the classroom. The CEE Counseling department (625-2500) will provide further information on these options.

1. Extension Classes (including Continuing Education for Women)

Register for Extension classes offered at any of several convenient locations near you! See page 509.

2. CEE Independent Study Correspondence and Media-Assisted Courses

You may earn credits by self-paced study. All course requirements can be completed by mail. See page 42.

3. Continuing Education for Women

Continuing Education for Women offers daytime courses both on and off campus for credit. (Men are welcome in the classes too!) Telephone 624-5267. See page 365.

4. Credit by Examination

Earn credit by examination in fields in which you have gained knowledge outside the classroom. See page 41.

5. CLEP Program

You may earn credits by taking the College Level Examination Program (CLEP) examinations. See page 41.

6. Studying Independently

You may register for "independent study"—a Y registration—and earn credits without attending class. See page 40.

7. Extra Credit

You may register for and earn extra credits—an X registration—in Extension courses if you are willing to do extra course work. See page 40.

8. University College

You may earn up to 15 credits per quarter for an independent project by registering for University College 3075. See page 41.

9. Directed Study, Research Projects

Earn credit by designing directed study and/or research projects around your job activities or involvement in the community. See page 41.

Questions & Answers

Questions most often asked about Extension Classes:

Most answers to questions about Extension Classes and Continuing Education for Women are found in this Bulletin. Check the Index at the back of this Bulletin.

1. How do I register? What hours can I register? Where do I register? (See page 8)
2. How can I earn a degree entirely through Extension? Which ones? (See page 469)
3. I have been attending college elsewhere. How can I continue my educational program through Extension? (See page 47)
4. When does registration for classes begin? End? (See page 8)
5. How do I get the credits I've earned in Extension entered on my college transcript? (See page 36)
6. What do I have to do to use my veteran's benefits to take Extension Classes? (See page 30)
7. Are there admission requirements for Extension Classes? (See page 20)
8. Are there ways to earn credits in addition to attending classes? (See page 40)
9. Can I get any financial assistance to take Extension Classes? (See page 24)
10. What is the difference between certificate and degree credit? (See page 37)
11. Are classes offered at off-campus locations near my home or work? (See page 509)
12. What is the noncredit "Compleat Scholar" Program? (See page 367)
13. Can I take classes during the day or on weekends? (See page 20)

More questions?

Call Extension Classes: 625-3333

From the dean

With today's highly competitive job market, educational credentials are becoming increasingly important. Continuing Education and Extension and the Department of Extension Classes can help you achieve your educational and career goals. Not only does Extension Classes offer a wide selection of courses, but over 20 certificates and more than 30 degree options and majors are available through Extension Classes.

So whether you're pursuing a degree or seeking education for vocational or avocational reasons, there's a course waiting for you in the Extension Classes Bulletin.

Harold A. Miller

Dean, Continuing Education and Extension

From the director

There are many advantages of living in or near the Twin Cities metropolitan area. The area has long been recognized as one that has great access to the performing arts. The sports menu is full, all the way from youth sports to professional sports. There are abundant opportunities to partake in the natural environment, and those opportunities are enhanced by the annual parade of the theatre of seasons.

Educational opportunities are also plentiful, both credit and noncredit, from community education to graduate education. And you just happen to have a world-class university in your backyard—the University of Minnesota. Those of us who work in Extension Classes are dedicated to making the educational resources of the University of Minnesota available to you in every way we can. The courses and programs that you will find in this bulletin include a great range of educational opportunities that are available to you.

If you started your education several years ago, perhaps the time has come to continue on that journey. If you haven't started, we're here to help you. You'll find many students here who have walked in your shoes.

John S. Malmberg

Director, Extension Classes

University of Minnesota

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Duluth Continuing Education Center, Theresa A. Neil, 403 Darland Administration Building, University of Minnesota—Duluth
Extension Classes, John K. Malmberg, 180 Wesbrook Hall
Independent Study, Deborah L. Hillengass, 33 Wesbrook Hall
MacPhail Center for the Arts, Peter H. Mansfield, 1128 LaSalle Avenue, Minneapolis
Morris Continuing Education Center, Roger S. McCannon, 226 Community Services Building, University of Minnesota—Morris
Professional Development and Conference Services, David M. Grossman (acting), 215 Nolte Center for Continuing Education
Rochester Continuing Education Center, Carol E. Lund, 855—30th Ave. S.E., Rochester
Summer Session, Jack K. Johnson, 101 Johnston Hall
University Film and Video, Judith A. Gaston, 1313 Fifth Street S.E., Suite 108, Minneapolis
University Media Resources, Sheldon Goldstein, 540J Rarig Center

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Extension Classes Programs—Credit classes,
Continuing Education for Women, Early
Childhood Studies, Elderhostel, The Compleat
Scholar, Compleat Scholar Weekends, The
Global Campus, Neighborhood Programs,
Research Explorations, Split Rock Arts
Program

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Equal Opportunity

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation. In adhering to this policy, the University abides by the Minnesota Human Rights Act, Minnesota Statute Ch. 363; by the Federal Civil Rights Act, 42 U.S.C. 20000e; by the requirements of Title IX of the Education Amendments of 1972; by Sections 503 and 504 of the Rehabilitation Act of 1973; by Executive Order 11246, as amended; by 38 U.S.C. 2012, the Vietnam Era Veterans Readjustment Assistance Act of 1972, as amended; and by other applicable statutes and regulations relating to equality of opportunity. Inquiries regarding compliance may be directed to Patricia A. Mullen, Director, Office of Equal Opportunity and Affirmative Action, University of Minnesota, 419 Morrill Hall, 100 Church Street S.E., Minneapolis, MN 55455 (612/624-9547).

When and How to Register

Extension Classes Calendar 1993-94

Registration dates, term dates, important deadlines, days when classes do not meet

	Fall Quarter (and fall spec term)	Fall Sem	Winter Quarter (and winter spec term)	Spring Sem	Spring Quarter (and spring spec term)
Registration by mail begins for classes listed in this bulletin	Aug. 2	Aug. 2	Nov. 2	Nov. 2	Feb. 1
Registration by mail begins for day school classes through Extension	Aug. 16	—	Nov. 15	—	Feb. 21
In-person registration begins for all classes	Sept. 7	Sept. 7	Dec. 7	Dec. 7	Mar. 8
Last day to register without a late fee	Sept. 15	Sept. 15	Dec. 15	Feb. 2	Mar. 16
Classes begin	Sept. 23 (Th)	Sept. 23 (Th)	Jan. 3	Feb. 14	Mar. 28
Last day to cancel and receive an automatic "W"; registration or cancellation after this date requires scholastic committee approval. See pages 16 and 48.	Nov. 5	Nov. 29	Feb. 11	Apr. 22	May 6
Final exam period	Dec. 6-11	Jan. 31-Feb. 5	Mar. 14-19	June 6-11	June 6-11
Last day of term	Dec. 11	Feb. 5	Mar. 19	June 11	June 11
Holidays and semester term breaks; no classes held	Nov. 25-26	Nov. 25-26 Dec. 13-Jan. 2 Jan. 17	Jan. 17 Mar. 8 May 30	Mar. 8 Mar. 21-27	May 30

In addition, Extension offices are closed on University holidays; see *Office Hours*, next page.

Office Hours

Regular Hours for Campus Office, 101 Wesbrook Hall

June 14-July 30, 1993

Monday-Thursday 8 a.m. to 6:30 p.m.

Friday 8 a.m. to 4:30 p.m.

Aug. 2-Sept. 3, 1993

Monday-Friday 8 a.m. to 4:30 p.m.

Sept. 7, 1993-June 11, 1994 (except for special hours during registration, term breaks, and holidays; see below)

Monday-Thursday 8 a.m. to 8 p.m.

Friday 8 a.m. to 4:30 p.m.

Special Hours: Registration Dates, Term Breaks, Holidays

Summer

July 5 Closed (Independence Day observed)

Sept. 6 Closed (Labor Day)

Sept. 7-9 Tuesday-Thursday, 9 a.m. to 8 p.m. (fall in-person registration)

Sept. 10 Friday, 9 a.m. to 4:30 p.m. (fall in-person registration)

Sept. 11 Saturday, 9 a.m. to 1 p.m. (fall in-person registration)

Sept. 13-16 Monday-Thursday, 9 a.m. to 8 p.m. (fall in-person registration and late registration)

Sept. 17 Friday, 9 a.m. to 4:30 p.m. (late registration)

Fall Quarter

Nov. 25-26 Closed (Thanksgiving holidays)

Dec. 7-9 Tuesday-Thursday, 9 a.m. to 8 p.m. (winter in-person registration)

Dec. 10 Friday, 9 a.m. to 4:30 p.m. (winter in-person registration)

Dec. 11 Saturday, 9 a.m. to 1 p.m. (winter in-person registration)

Dec. 13-15 Monday-Wednesday, 9 a.m. to 8 p.m. (winter in-person registration)

Dec. 16-17 Thursday-Friday, 9 a.m. to 4:30 p.m. (late registration)

Dec. 20-22 Monday-Wednesday, 8 a.m. to 4:30 p.m.

Dec. 23-24 Closed (holidays)

Dec. 27-30 Monday-Thursday, 8 a.m. to 4:30 p.m.

Dec. 31 Closed (New Year's Day observed)

Office hours

Winter Quarter

- Jan. 17 Closed (Martin Luther King, Jr. Birthday observed)
Mar. 8 No classes may meet after 6 p.m.; caucus night. Registration office open until 8 p.m.
Mar. 8-10 Tuesday-Thursday, 9 a.m. to 8 p.m. (spring in-person registration)
Mar. 11 Friday, 9 a.m. to 4:30 p.m. (spring in-person registration)
Mar. 12 Saturday, 9 a.m. to 1 p.m. (spring in-person registration)
Mar. 14-17 Monday-Wednesday, 9 a.m. to 8 p.m. (spring in-person registration and late registration)
Mar. 18 Friday, 9 a.m. to 4:30 p.m. (late registration)
Mar. 21-24 Monday-Thursday, 8 a.m. to 4:30 p.m.
Mar. 25 Closed (floating holiday)

Spring Quarter

- May 30 Closed (Memorial Day)
Campus offices are closed weekends except for Saturday mornings (9 a.m. to 1 p.m.) during in-person registration periods only.

Hours for off-campus registration sites

MacPhail Center, 1128 LaSalle Avenue, downtown Minneapolis

- Sept. 7-15 Monday-Thursday, 9 a.m. to 6 p.m.; Friday, 9 a.m. to 4:30 p.m.
Dec. 7-15 Monday-Thursday, 9 a.m. to 6 p.m.; Friday, 9 a.m. to 4:30 p.m.
Mar. 8-16 Monday-Thursday, 9 a.m. to 6 p.m.; Friday, 9 a.m. to 4:30 p.m.

St. Paul Skyway Registration Booth, Norwest Center, Fifth and Minnesota

- Sept. 7-15 Monday-Friday, 9 a.m. to 5 p.m.
Dec. 7-15 Monday-Friday, 9 a.m. to 5 p.m.
Mar. 8-16 Monday-Friday, 9 a.m. to 5 p.m.

Hours for CEE Counseling Department, 314 Nolte Center, Minneapolis Campus

(Please call for an appointment or for information: 625-2500)

- Monday-Friday, days 8 a.m. to 4:30 p.m.
Monday-Thursday, evenings By appointment

Register by mail, FAX, or in person

These are registration procedures for limited-enrollment classes and nonlimited-enrollment classes.

Read through these procedures carefully before you register! Correct registration is your responsibility. If you have questions after reading the information on registration procedures, call 625-3333. Most of the questions students ask are answered on these pages.

Limited-enrollment sections have specified limits on the number of students that will be permitted into the section. These sections are starred. The limit is given with the course description in most cases. Early registration by mail is the best way to obtain space in limited-enrollment sections.

Early registration is recommended even for nonlimited-enrollment sections to allow sufficient time for processing and return of fee statements. In rare cases, it may be necessary to place enrollment limits on nonlimited sections.

Registration information sessions are offered throughout the year by the CEE Counseling Office. These sessions are designed for students new to Extension and to the University; they focus on registration procedures, general requirements, and degree program admission. Limited information on transfer of credit and financial aid will also be available. For more information or to sign up, call CEE Counseling at 625-2500.

General registration instructions

- 1. Use the official registration form found at the back of this bulletin (call 624-2388 to request additional forms).**

Forms and information are also available at registration offices. Regular registration offices are at 101 Westbrook Hall on the Minneapolis campus (east bank) of the University of Minnesota and at the MacPhail

Center in downtown Minneapolis at 1128 LaSalle Avenue. A downtown St. Paul registration booth, open only during in-person registration periods, is located on the Skyway level of the Norwest Center, Fifth and Minnesota streets.

- 2. Complete the registration form giving all the requested information.**

Each course description in this bulletin provides information necessary in completing the registration form. Courses are listed under departmental or subject heading (alphabetically arranged); where several classifications are possible, cross references are given. Complete the spaces on the form that request information about the course; if there have been any changes to the room, day, or time you will be notified of those changes. A sample course description appears on page 13.

If you have a University student I.D. number, be sure to include it.

For information about grade base option, see pages 35 and 36.

Be sure to complete the enrollment period section giving the term and year (e.g., Fall Qtr 93 or Winter Qtr 94). If your course is offered on a special term, check the box for the quarter it is offered (fall, winter, spring) and fill in the start and end dates in the space provided.

Birth dates and social security numbers are requested for coding purposes and transcript identification. By supplying these numbers, you help insure that your grades and credits are recorded correctly and our mailing list is kept accurate.

The following information requested on your registration form is defined as private data under state and/or federal laws: birth date, sex, social security number, and University of Minnesota identification (I.D.) number. In general, this infor-

Registration

mation may not be released to others without your consent or a court order. The intended use of the requested information is to identify you in relation to other students' records. Disclosure of this information is voluntary.

Please type or print using ball point pen when completing the registration form.

If the form is not legible, fee statements cannot always be returned to students who register by mail, or record of enrollment may not be properly made on University files.

- 3. You are not registered until your tuition and fees are paid.** Checks must be for the full amount of the tuition and fees and made payable to the University of Minnesota. Be sure to include special fees,

course fees, and late fees, when applicable. All tuition and fees are due when you register (except for students on financial aid or whose tuition is billed to an approved agency or organization).

If you are classified as a non-resident/non-reciprocity student and are admitted to a degree program, you must pay the non-resident tuition rate given with the course.

Students are urged to pay fees by personal check, money order, or credit card. Change is not always available at in-person registration locations, and cash cannot be accepted at the downtown St. Paul registration booth.

Credit cards—You may charge tuition and fees on VISA and MasterCard.

-
- 4. You may register for all classes listed in this bulletin during the following registration periods:**

	Fall Qtr, Sem, or Fall Spec Term	Winter Qtr or Wtr Spec Term	Spring Sem	Spring Qtr or Spr Spec Term
By mail	Aug 2-Sept 15	Nov 2-Dec 15	Nov 2-Feb 2	Feb 1-Mar 16
In-person	Sept 7-15	Dec 7-15	Dec 7-15	Mar 8-16
Last day to register without a late fee	Sept 15, 1993	Dec 15, 1993	Feb 2, 1994	Mar 16, 1994

-
- 5. Joint day/Extension class registration:** You may register in certain day school classes, listed **only** in the day school quarterly *Class Schedule*, through the Extension Classes registration office during the following registration periods:

	Fall Quarter	Winter Quarter	Spring Quarter
By mail	Aug 16-Sept 15	Nov 15-Dec 15	Feb 21-Mar 16
In-person	Sept 7-15	Dec 7-15	Mar 8-16
Last day to register without a late fee	Sept 15, 1993	Dec 15, 1993	Mar 16, 1994

Students who complete one course which is part of a two- or three-part sequence are not automatically assured of space in the next course in the sequence. Early registration is

the best opportunity to obtain space in these courses.

Enrollment is limited in sections marked with a star (★).

Sample course description

The course description below indicates the information found in course descriptions throughout this bulletin.

5 1 2 3 4
Psy 5141 PSYCHOLOGY OF WOMEN. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident graduate credit \$396; Non-resident graduate credit \$792; Resident graduate school credit \$684; Non-resident graduate school credit \$1368.
 Psychological and physical sex differences, stressing developmental and environmental influences on dependency, aggression, achievement innovation, and achievement. Sex roles and sexuality during life phases. (Prereq 1001. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)
Fall Qtr, ★Sec 1,T, 6:20-8:50, WullH 230, Schletzer

- 6 7 8 9 10 11
1. Department designation and course number (a "C" after the number indicates certificate course)
 2. Course title
 3. Number of credits (if certificate credit, "certificate" will be specified) or "no credit" if applicable
 4. Tuition cost (see page 22 to determine your tuition rate)
 5. Course content (including prerequisites, limits, and special information)
 6. Term
 7. Star (★) indicates a limited-enrollment section
 8. Section number
 9. Day and time (times are p.m. unless indicated a.m.)
 10. Building and room
 11. Instructor's last name (if determined); see faculty list for title

Registration by mail (and FAX)

1. **Follow the steps outlined above in general registration instructions.**
2. **Make out a separate check to pay your tuition and fees for each limited class you register for by mail.** If one check is used to pay for two or more classes and one class is closed, the registrations cannot be processed and must be returned to you. Nonlimited-enrollment class registrations may be paid for by writing one check only. Do not send cash.

 You also may charge your tuition and fees on VISA or MasterCard. See details on the registration form.
3. **If there are classes or sections of classes that are acceptable alternatives to your first choice, list those on a separate sheet of paper.** If your first choice is closed, the registration office will select

the first available choice listed and process the registration. If you do not include an alternate choice and your class choice is closed, you will be notified.

4. **Mail in your registration forms, alternate choice form (optional), and tuition check(s) made payable to the University of Minnesota.** (*A separate tuition check is required for each limited-enrollment class.*) The address is:

 Department of Extension Classes
 University of Minnesota
 101 Wesbrook Hall
 77 Pleasant Street S.E.
 Minneapolis, MN 55455
5. **FAX registration.** You may submit your registration form by FAX during mail registration periods with billing authorized to your VISA or MasterCard account. The FAX number is 625-1511.

Registration

Registrations received in the Extension registration office will be processed on a daily basis beginning with registration dates specified here and continuing through the mail registration period. Spaces in limited-enrollment classes will be filled daily.

Registrations received during mail-only registration will receive priority in processing. Once in-person registration begins, space in limited-enrollment classes also will be assigned to students who register in person.

Students whose tuition and fees are to be billed to a company, governmental agency (including foreign governments), institution, scholarship, or the military may register by mail. See page 24.

Students registering with **Regents' Scholarships** should read the section on page 29.

Students registering under the Graduate Assistant Tuition Fellowship program or the Academic Staff Tuition Benefit should read the section on page 30.

Persons registering with G. I. Bill assistance must include the G. I. Bill Information Sheet with their registration. See the section on **Veterans**, page 31, for further information and instructions.

Checks, money orders, or credit card authorizations for late registrations (postmarked after midnight of the last day of the registration period) must include the late fee specified under **Late Registrations and Additions**. Checks must be for the exact amount of tuition and fees.

Students who have not received fee statements three weeks after mailing in registration forms and tuition payment should call 625-3333 to check whether the registration was received and processed. Students should assume they are registered unless notified otherwise. Registrations that cannot be processed for some reason are returned immediately (except for illegible copies).

In-person registration

1. Follow the steps outlined above in **General Registration Instructions**.

2. **In-person registration dates for each term are given below. See Office Hours, pages 9-10, for hours at all locations.**

Fall Quarter September 7-15

Fall Semester September 7-15

Winter Quarter December 7-15

Spring Semester December 7-15,
December 27-
February 2

Spring Quarter March 8-16

3. **Bring your completed registration form to the registration clerk at an Extension registration office during the in-person registration period.** See locations below. For limited-enrollment classes, the clerk will tell you whether there is still space available in the class. Students who register at the Minneapolis campus registration office at 101 Wesbrook Hall should check the closed-class board before bringing their registrations to the registration clerk. For nonlimited classes, the clerk will check your registration form to make sure it is completed properly.

4. **You must pay the full amount of tuition and fees when you register. You are not registered until your tuition and fees are paid.** Students are urged to pay tuition with a personal check, money order, or by credit card. The downtown St. Paul registration booth cannot accept cash.

5. **Registration Offices (see campus and parking maps near the end of this bulletin):**

Minneapolis Campus

Extension Classes
101 Wesbrook Hall
Minneapolis Campus

Minneapolis

MacPhail Center
1128 LaSalle Ave
Downtown Minneapolis

St. Paul

Registration Booth
Norwest Center
Skyway Level
Downtown St. Paul

Saturday registration—The Westbrook Hall registration office is open one Saturday each quarter during in-person registration. Other registration offices are closed weekends.

See registration hours on the calendar, page 8.

Classes may close at any time before or during in-person registration. Students who wait to register in person for limited-enrollment classes may expect to stand in line at registration offices but have no assurance of obtaining space in classes they desire.

Students are urged to register early by mail.

Alternate choice forms

Students who are registering by mail are urged to submit a note listing acceptable alternative sections or courses. If the class the student is trying to register for is closed, the Extension registration office will select the first available choice listed on the alternate choice form and process the registration. (Include registration forms and tuition only for your first choice.)

Closed classes

Limited-enrollment classes for which there is heavy demand will often reach the maximum limit and close. The reasons for establishing limits on enrollment vary. Normally class limits cannot be exceeded.

No waiting lists are kept for Extension classes. If students have unusual and compelling reasons

to be admitted to a closed class, they may state their case to the instructor of the class. **Written** permission of the instructor is required for admission to any closed class. These students are not charged a late fee through the first week of class. After that, late registrations will be assessed the appropriate late fee. Registrations sent by U.S. mail are effective the date of the postmark (or the date received if by campus mail).

Some departments have a strict policy against exceeding class limits. A note appears near the beginning of the department's course listings for those departments which do not admit students to classes that have closed.

Early registration permission

Extension students who are nearing the completion of their degree or certificate program from the University and are having difficulty getting registration space in a **required** course may obtain special permission to register early for a specific course if it has limited enrollment.

Submit either a written request for permission to register early, along with transcripts of all work taken, or a letter from your major adviser verifying pending graduation within two quarters, to CEE Counseling, University of Minnesota, 314 Nolte Center, 315 Pillsbury Drive S.E., Minneapolis, MN 55455. Specify the department, course number, and section for which you wish to register. **This request must be made at least two weeks prior to the start of mail registration for the term in which you wish to register.** The counseling office will notify you by mail regarding the action taken and how to complete registration if permission is granted.

If you are not eligible to request early registration, please note that students whose registration requests and payment arrive by mail on the first day of mail registration receive priority consideration (see mail registration instructions).

Registration

Late registration and additions

Registration during the regular registration period is strongly recommended. Classes are canceled shortly after the end of the regular registration period if they do not have sufficient enrollment.

All registrations, whether initial or added, received either in person or by mail (effective the date of the postmark) after the close of the official registration period as designated in the **When and How to Register** section of this Bulletin will be considered late registrations and will be subject to late fees based on the following schedule:

	<u>FQ/FS</u>	<u>WQ</u>	<u>SS</u>	<u>SQ</u>
<i>Through the first week of classes, \$5 (if accepted)</i>	Oct. 2	Jan. 8	Feb. 19	Apr. 2
<i>Through the second week of classes, \$10 (if accepted)</i>	Oct. 9	Jan. 15	Feb. 26	Apr. 9
<i>After the second week of classes, \$20 (if accepted)</i>	Oct. 16	Jan. 22	Mar. 5	Apr. 16

A separate late fee applies to each course you are registering for.

All registrations made after any quarter or semester class has met twice must be accompanied by the written permission of the instructor.

Registration is not permitted without scholastic committee approval after the following dates:

Fall quarter:	November 5
Fall semester:	November 29
Winter quarter:	February 11
Spring semester:	April 22
Spring quarter:	May 6

Under unusual circumstances the CEE scholastic committee may approve registration after the dates given above. Students can obtain a petition form at the Extension Classes Registration Office, 101 Westbrook Hall (625-3333), or at CEE Counseling, 314 Nolte Center (625-2500). Approval of registration after these deadlines is rare and given only in cases of extenuating circumstances, usually beyond the student's control. Therefore, students are strongly encouraged to consider financial, work-related, and other circumstances that may affect their registrations before the sixth week of the quarter or ninth week of the semester. Contact an adviser in

the CEE Counseling Office early in the quarter to discuss options if you have questions.

For special term and special classes, any late registrations accepted after the first class must be accompanied by the written permission of the instructor. Late fees will be based on when the registration is received and how many times the class meets.

The late fee applies whether a class carries degree credit, certificate credit, or no credit; it applies to special classes and it applies whether the student wants to audit or to take a class for credit. The time of registration by mail will be determined by the postmark (or date received if sent by campus mail or FAX).

Those students registering late for Compleat Scholar/Practical Scholar noncredit courses (see page 367) must pay a \$5 late fee.

There are **no** late fees for persons registering on the *62-Plus Plan* (see page 45).

These late fees are not included in the privilege of registration with authorizations unless specifically authorized, or privilege of Public Law 894, military personnel on Off-Duty Academic Instruction or Tuition Assistance Programs. They must be paid personally by the student.

Bookstores

The evening schedule listed on the next page has been established by University bookstores. **Note that bookstores are not open every night, but all bookstores do have special hours early in the term. See hours below.**

The **Minnesota Book Center**, on the East Bank campus, is located in Williamson Hall between Nolte Center and Jones Hall.

Books Underground is the St. Paul campus bookstore. Enter through the Student Center or Coffey Hall.

Books for off-campus classes are available at the University bookstores. The notice directly under each department heading in the Course Offerings section lists the bookstore that sells books for classes in that department.

Pick up books before class. Textbooks may be purchased before the first night of class. Lists of course offerings and required books are in the bookstores. However, if you are registered in an English Composition class, please attend the first class session before purchasing required books and materials.

Special arrangements for book pick-up—Arrangements may be made to send books between the St. Paul campus and Minneapolis campus bookstores.

Ordering textbooks by phone—You may order textbooks by telephone and charge costs for books and delivery to your Visa, MasterCard, or Discover credit card account. Call the appropriate bookstore (phone numbers below) and be prepared to give the course number, section number, your delivery address, and credit card information. If textbooks are in stock, your order will be filled and shipped within two working days. Postage and handling is \$2.50 plus the actual UPS charge. Wait for confirmation of your registration before ordering books by phone (handling and delivery charges are not refundable).

Minnesota Book Center	624-1819
H.D. Smith Bookstore	625-5317
Books Underground (StP)	624-9200
Health Sciences Bookstore	625-8600

Book refunds—If a course is canceled or if the student drops the class, books may be returned for a full refund through the second week of classes if the student has a sales receipt for the books and the book is in original condition. A picture I.D. is required to obtain the full refund. (Deadlines: Fall Quarter, Oct. 6 (Wed.); Winter Quarter, Jan. 14; Spring Quarter, Apr. 8)

Resale of books—Since used textbooks offer a distinct savings to students, the University Bookstores attempt to buy as many as they can possibly use. If your textbook is required for the next quarter, and the bookstore does not have enough copies on the shelves, you may sell it during finals week for 60% of the current new price of the book. This price is offered regardless of the number of times the book has changed hands provided it has remained in good condition. These books are then resold at 75% of new book price. If the book is a current edition, but not required for the next quarter, a wholesale book company will buy them for current wholesale value and send them off campus to be resold to another school. Books are purchased throughout the school year. You need a picture I.D. to sell your books.

See maps in the back of this Bulletin for locations of campus bookstore buildings.

Minnesota Book Center (Williamson Hall, East Bank)

The Minnesota Book Center located in Williamson Hall, 231 Pillsbury Drive, handles books for courses in the College of Liberal Arts except for those CLA departments listed below in the Harold D. Smith Bookstore, College of Education, General College, and the Institute of Technology.

Telephone 625-6000

Bookstores

Minnesota Book Center hours

Regular weekday hours: 8:30 a.m.-5:30 p.m., Monday through Thursday; 8:30 a.m.-5 p.m., Friday. Sept. 7-June 10.

First week of quarter: 7:30 a.m.-7:30 p.m., Monday through Thursday; 7:30 a.m.-6 p.m., Friday. Fall—Sept. 23-29 (Thursday-Wednesday); Winter—Jan. 3-7; Spring—Mar. 28-Apr. 1.

Second week of quarter: 8:30 a.m.-6:30 p.m., Monday through Thursday; 8:30-5 p.m., Friday. Fall—Sept. 30-Oct. 6 (Thursday-Wednesday); Winter—Jan. 10-13; Spring—Apr. 4-7.

Saturdays: Fall quarter, 10 a.m.-2 p.m., Sept. 11 to Dec. 18, except on Sept. 25 (9 a.m.-6 p.m.) and Dec. 11 (9 a.m.-4 p.m.). Winter quarter, 10 a.m.-2 p.m. on Jan. 8, 15, and Mar. 12; 9 a.m.-4 p.m. on Mar. 19. Spring quarter, 10 a.m.-4 p.m. on Mar. 26; 10 a.m.-2 p.m. on Apr. 2, 9; 9 a.m.-4 p.m. on June 11.

Harold D. Smith Bookstore (West Bank)

The West Bank Bookstore, located between Anderson Hall and Blegen Hall, sells books for courses in the Carlson School of Management, as well as for these College of Liberal Arts departments: history, political science, geography, sociology, Afro-American and African studies, international relations, theatre arts, studio arts, economics, music (and music education), public affairs, and urban studies.

Telephone 625-3000

H.D. Smith Bookstore hours

Regular weekday hours: 8:30 a.m.-5:30 p.m., Monday through Thursday; 8:30 a.m.-5 p.m., Friday. Sept. 7-June 10.

First week of quarter: 8 a.m.-7:30 p.m., Monday through Thursday; 8 a.m.-5:30 p.m., Friday. Fall—Sept. 23-29; Winter—Jan. 3-7; Spring—Mar. 28-Apr. 1.

Second week of quarter: 8:30 a.m.-6:30 p.m., Monday through Thursday; 8:30-5 p.m., Friday. Fall—Sept. 30-Oct. 6 (Thursday-Wednesday); Winter—Jan. 10-13; Spring—Apr. 4-7.

Saturdays: Fall quarter, 10 a.m.-2 p.m., Sept. 18, 25, and Oct. 2, and 9 a.m.-3 p.m. on Dec. 11. Winter quarter, 10 a.m.-2 p.m. on Jan. 9, and 9 a.m.-3 p.m. on Mar. 19. Spring quarter, 10 a.m.-2 p.m. on Mar. 26 and Apr. 2, and 9 a.m.-3 p.m. on June 11. May be open other Saturdays during the regular academic year. Call for dates and hours.

Books Underground Bookstore (St. Paul campus)

Books Underground sells books for courses taught on the St. Paul campus.

Telephone 624-9200

Books Underground hours

Regular weekday hours: 8:30 a.m.-5 p.m., Monday through Friday, Sept. 7-June 10.

First week of quarter: 8 a.m.-6:30 p.m., Monday and Tuesday (except Thursday and Monday in fall only); 8 a.m.-5:30 p.m., Wednesday through Friday. Fall—Sept. 23-29; Winter—Jan. 3-7; Spring—Mar. 28-Apr. 1.

Health Sciences Bookstore (2-554 Malcolm Moos Health Sciences Tower, East Bank)

The Health Sciences Bookstore sells books for courses in anatomy, history of medicine, laboratory medicine, microbiology, nursing, pharmacognosy, pharmacy, physical medicine and rehabilitation, physiology, public health, family planning administration, child and adolescent psychiatry, mortuary science, and other courses in the health sciences.

Telephone 625-8600

Health Sciences Bookstore hours

Regular weekday hours: 8:30 a.m.-5 p.m., Monday through Friday, Sept. 7-June 10.

First week of quarter: 8 a.m.-6:30 p.m., Monday through Thursday; 8 a.m.-5:30 p.m., Friday. Fall—Sept. 23-29; Winter—Jan. 3-7; Spring—Mar. 28-Apr. 1.

Saturdays: Fall quarter, 10 a.m.-2 p.m. on Sept. 25. Winter quarter, 10 a.m.-2 p.m. on Jan. 8.

Enrollment Information

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Enrollment

Enrollment into Extension Classes

Credit courses through Continuing Education and Extension are offered in time formats, places, and delivery modes designed to accommodate students' needs. Course content and materials, work expected of students, and responsibilities of instructors are determined by the academic discipline granting the credit. Courses are expected to have the integrity and legitimacy of campus-based day classes offered for equivalent credit.

Anyone may register for Extension Classes. There are no admission or entrance requirements; registrants need not possess a high school diploma. Students need only have a desire to learn. Registration in specific programs or classes may require prerequisite courses or experience. (See *Prerequisites*, page 34.) Students on financial aid usually must be admitted to a degree or certificate program; check with an adviser.

Students wishing to register for graduate school credit, refer to page 38.

Day school students who wish to register in Extension Classes are urged to consult first with their day school adviser or college office. *Day school students enrolled in both day school classes and Extension classes must register separately and pay separate tuition for each.*

Students who have been dropped from any unit of the University or who have been placed on probation should clear with their college before registering for Extension Classes; otherwise, there is no assurance that the credits will be accepted by the college from which they wish to earn a degree.

How to Be Admitted to the University

Students interested in being admitted to a degree program at the University of Minne-

sota must follow certain procedures and meet specific requirements to do so. They should schedule an appointment with a CEE advisor to determine their eligibility, receive information on steps to follow, and complete the necessary steps for admission. *Telephone 625-2500 to schedule a day or evening appointment or for phone consultation.*

Joint Day/Extension classes

Extension students may enroll in certain day school classes through Extension registration offices. However, students enrolled at the University through the day school may not register for day classes through Extension.

For classes before 3:30 p.m., students should consult the day school quarterly *Class Schedule*. Registration is the same as for regular Extension classes (listed in this bulletin) except that registration by mail for these classes begins later. Students may be required to obtain written permission from the academic department offering the course and the instructor using the "Special Permission To Register Joint Day/Extension" form available from the registration office or by calling 624-2388. See the Class Schedule for additional information about obtaining instructor permission.

Departments that make day classes (offered before 3:30 p.m.) available to Extension students are indicated in the Course Offerings section of this bulletin (a note appears boxed near the beginning of the department's course listings). The day school Class Schedule contains a list of specific classes. Access to these courses is usually limited to 2 or 3 students per course.

If you are planning to register through Extension Classes for a course offered before 3:30 p.m., call 624-2388 when mail registration begins each quarter to request a copy of the

daytime Class Schedule, and procedures for registering in day school classes through Extension.

Students who have been dropped from any unit of the University or who have been placed on probation should clear with their college before registering for Extension Classes; otherwise, there is no assurance that the credits will be accepted by the college from which they wish to earn a degree.

Joint day/Extension classes that begin at 3:30 p.m. or later are listed in this bulletin. The symbol ● appears before the course section number.

Note—Enrollment in joint day/Extension classes does not constitute admission as required for some financial and programs such as Pell Grant or Stafford Loan.

Students pursuing a degree who are not yet formally admitted to a program should seek advising regularly from CEE Counseling; call 625-2500 for an appointment.

Counseling and academic advising

The CEE Counseling Office offers academic and financial aid advising and career/educational counseling services to current or prospective students interested in CEE offerings through Extension Classes, Independent Study, and Summer Session. The Office is located at 314 Nolte Center; **telephone 625-2500**. Nolte Center is located at 315 Pillsbury Drive S.E. (at 17th Ave. S.E.). See *Maps* in the back of this Bulletin. Students with mobility impairments should call ahead for assistance; a curb cut is provided on the south entrance to Nolte Center (Pillsbury Drive S.E.).

Counseling—Professional counseling services are available to assist persons with exploration, choice, planning, and implementation of educational and career goals. Counselors can help students learn more about their interests, values, abilities, and personal characteristics related to goals; identify career options and major fields of study; develop educational and career plans; and assess problems related to academic performance. Counseling services are offered for a fee and are available by appointment.

Advising—Academic advising is available by appointment to help students select programs of study (see *Degrees and Certificates*, page 469); determine prerequisites; interpret degree requirements; evaluate transcripts of previous college work; choose the kinds and number of courses to take and the order in which they should be taken; arrange for examinations for credit or advanced standing; and handle other academic matters.

Financial aid—Advising is available to students seeking information about grants, scholarships, loans, and work study for part-time or full-time study.

Registration information sessions—Information sessions, offered throughout the year by CEE Counseling, provide new students with assistance in fall quarter registration. These sessions focus on registration procedures, general requirements, and degree program admission. Limited information on transfer of credit and financial aid is available at the sessions. For more information or to sign up, call 625-2500.

Students may call 625-2500 to arrange for day or evening appointments or to consult with an adviser by phone. See *Office Hours*, page 10.

Tuition and fees

How to Determine Which Tuition Rate To Pay

Consistent with current University policy on resident status, beginning Fall 1992 the Department of Extension Classes will charge nonresident rates. Please read the following to determine the tuition rate you should pay.

Different tuition rates are listed with each degree credit course. If you are registering for a course that has a course number beginning with zero (0xxx), only one rate will be listed with the course. If you have been admitted to a degree program at the University of Minnesota and are classified as a non-resident, non-reciprocity student, you will need to pay either undergraduate or graduate non-resident tuition rates. On the registration form you will be asked to check the box that describes your student status.

I have never been admitted to a degree program at the University of Minnesota. (Pay Minnesota *Resident* tuition rates.)

I have been admitted to a degree program at the University of Minnesota and am classified as a resident or reciprocity student. (Pay Minnesota *Resident* tuition rates.)

I have been admitted to a degree program at the University of Minnesota and am classified as a non-resident, non-reciprocity student. (Pay *Non-resident* tuition rates.)

Note—Student status is subject to compliance review.

Graduate Credit Tuition Rates

If you are registering for a 5xxx-level course and want graduate credit, note that four graduate tuition rates are listed. The rate you pay will depend on whether you intend to use the course in a University of Minnesota Graduate School program and whether you are classified as a resident or non-resident of the state of Minnesota. To determine residency status, review the information above (which also appears on the registration form). The four graduate tuition rates are defined below.

Resident graduate credit (\$99 per credit): Pay this rate if you are classified as a resident of Minnesota and *are not* using the course in a University of Minnesota Graduate School program.

Non-resident graduate credit (\$198 per credit): Pay this rate if you are classified as a non-resident of Minnesota and *are not* using the course in a University of Minnesota Graduate School program.

Resident Graduate School credit (\$171 per credit): Pay this rate if you are classified as a resident of Minnesota and *are* using the course in a University of Minnesota Graduate School program.

Non-resident Graduate School credit (\$342 per credit): Pay this rate if you are classified as a non-resident of Minnesota and *are* using the course in a University of Minnesota Graduate School program.

(These rates not yet approved by the Board of Regents and are subject to change.)

Tuition and fees are subject to change without notice.

The full amount of the tuition and other fees must be paid at the time of registration (tuition rates in effect at the time of registration apply). Additional fees may be assessed for use of a laboratory, extra materials, or audio-visual equipment. Tuition charges and fees do not cover books. Checks or money orders must be drawn for the exact amount due, and made payable to the University of Minnesota.

Tuition options for each course are listed after the course title. Any course fees or special fees, required in addition to the tuition, are included in the total. The cost per credit varies depending on the level of the course, the tuition rate for the college, resident status, and whether you are applying the course to a University of Minnesota Graduate School program. In the *Course Offerings* section of this Bulletin, departments are listed alphabetically, and the college that the department is a part of is listed below the department name.

Tuition and fees have not yet been approved by the Board of Regents and are subject to change.

For special tuition rates for students age 62 and older, see page 44.

A regularly enrolled day school student who concurrently takes day courses and Extension courses must register on separate forms and pay both day and Extension fees. **Day school students are urged to consult first with their advisers before registering in Extension classes.**

Students who overpay will receive a refund by mail. Students who underpay will have their registration and tuition checks returned by mail or will be notified of additional tuition due if their registration was processed. For registered students who underpay, a hold will be placed on the student's record if payment is not received.

A \$20 handling fee is charged for all checks returned by a bank. Students should contact the Financial Systems Office at 138 Wesbrook (624-6354) if they have received notification from their banks that a check has been returned to Extension Classes.

No arrangements for partial payment can be made. However, VISA and MasterCard are accepted for tuition and fees. Students may be eligible for financial aid; see *Financial Aids and Loans*, below.

Nonresident and resident rates—Students who have been admitted to a degree program at the University of Minnesota and who are classified as a nonresident, nonreciprocity student will pay nonresident tuition rates. If you have never been admitted to a degree program at the University of Minnesota, you pay resident tuition rates.

Students are not registered until their tuition and fees are paid.

You will receive a receipted confirmation when you register; it replaces the fee statements formerly issued. Retain this document; it is your proof of enrollment. It serves as official identification as an Extension student and must be presented in order to vote in student elections, obtain books from University libraries, or purchase student athletic and other tickets.

For information on tax deductions for Extension Classes tuition, see page 51.

Enrollment verification

Students who need enrollment verification (for bank or business purposes) should bring the paid fee statements to Student Relations, 150 Williamson Hall. Full-time undergraduate students carry 12 or more credits; three-fourths time, 9 credits; half-time, 6 credits; less than half-time, 5 credits or fewer. (Credits for semester classes are distributed over two quarters; two-thirds of the credits are applied in one term and one-third of the credits apply in the other term.)

Verification can be made only for enrollment and the enrollment dates of that term in Extension classes, **not** for attendance or grades. Duplicate fee statements are available in 101 Wesbrook Hall; transcripts are available at the Certification and Transcript Service, 150 Williamson Hall (625-5333).

Registering with an authorization for payment

All students who plan to register under the authority or with the assistance of (1) an institution, company, or scholarship; (2) federal or state agency, including military service; or (3) foreign government or agency, may register by mail or in person at 101 Wesbrook Hall, telephone 624-5577, on the Minneapolis campus.

Authorizations for payment only apply to credit courses. Students taking noncredit courses must include a check or money order for tuition (or credit card authorization).

If registering by mail, authorizations must include the following:

1. **Proper address:** Department of Extension Classes, University of Minnesota, 101 Wesbrook Hall, 77 Pleasant Street S.E., Minneapolis, MN 55455

2. **Student's name**
3. **Correct amount of tuition and fees** for specific classes
4. **Term or dates of eligibility**
5. **Authorizing signature** or stamp required
6. **Complete address of agency** to be billed for tuition.

To register, follow the procedures outlined under *When and How to Register*. Include your authorization (in place of your check) with your registration forms.

If your authorization is already on file, you **must** include a note with your registration indicating the source of your authorization, or your registration will be returned.

All materials should be sent to 101 Wesbrook Hall.

Registration forms must be filled out completely.

Financial aids and loans

Common requirements for financial aid

Because financial aid programs require admission to a degree or certificate-granting program, you are encouraged to inquire about admission at the same time you apply for aid. Other requirements common to many financial aid programs include: U.S. citizen or eligible non-citizen (such as permanent resident or refugee); no prior bachelor's degree; satisfactory academic progress (see below); completion of an academic program within the maximum time frame allowed by the Office of Student Financial Aid (216 attempted credits for a bachelor's degree); demonstrated financial need; registration in

on-campus credit classes; enrollment within the maximum or minimum number of credits required for eligibility; no default on educational loans or financial aid repayment owed; and no tuition or other holds on your University record.

Academic progress

For students not held to other college, department, or program academic standards, CEE will determine scholastic standing by evaluating satisfactory progress with the following criteria:

Completion of two-thirds (66%) of total credits for the review period with grades of A, B, C, or S. Grades of D, N, I, and F are not considered satisfactory. Grades of W, V, or X are not included in this calculation.

The formula for determining satisfactory progress is as follows: (Total credits grades A, B, C, or S) divided by (Total credits graded A, B, C, D, F, S, N, or I) equals 66%.

Grades in repeated courses and noncredit remedial courses are considered in total credits.

Students who do not meet the criteria for good academic standing will not be eligible to receive financial aid, veterans benefits, and specially funded programs.

Students determined not to be in good academic standing will have an opportunity to appeal their status if there is additional information to present which may change their academic standing.

Students are encouraged to contact an academic progress adviser at 625-2500 for more information and assistance in reviewing options, study skills, and steps that might improve academic standing.

Students in certificate programs who do not register for at least one credit within six consecutive quarters will be withdrawn from their certificate program.

Registration with financial aid (delayed payment)

If the Office of Student Financial Aid (OSFA) has notified you that you are eligible for financial aid or you have submitted an eligible Pell Grant Student Aid Report to OSFA, you are encouraged to request delayed payment of tuition and fees rather than submitting payment at the time you register. If you receive delayed payment, a STARS (Student Accounts Receivable System) account will be created for you and this will simplify issuance of your financial aid. In addition to showing financial aid eligibility, you need to be admitted to a degree or certificate-granting program, be in good academic standing, and have a University record free of tuition and other selected holds. If you are receiving a Minnesota State Grant, admission is not required. Contact CEE Counseling at 314 Nolte Center (625-2500) if you have questions about the criteria for delayed payment.

Follow these steps:

1. Fill out registration forms following the instructions outlined in this bulletin. To insure accurate record keeping, be sure to include your social security number and University I.D. number, if you have one, in the space provided on the registration form.
2. Include a note requesting delayed payment (provided you meet all criteria) if you mail in your registration, or take your registration forms to the financial aid desk in 101 Westbrook Hall if you come in to register. Your registration forms will be checked for eligibility.
3. If you have completed all eligibility requirements, your registration will be processed and your financial aid will be applied to tuition and fees. (You will be billed for, or refunded, any difference between the amount of your award and the tuition and fees that are due.)

Financial aids

Students requesting delayed payment should register during regular registration periods to avoid late fees.

When delayed payment is granted, Extension registration staff will coordinate with the Student Accounts Receivable System (STARS) so your financial aid will be credited to your account.

Receiving delayed payment does not guarantee receipt of financial aid. Students who do not receive their expected financial aid are still responsible for payment of their tuition and fees. A student who never attends class or stops going to classes (1) must officially cancel at 101 Westbrook Hall, and (2) must pay that part of the tuition and fees that would not be refundable based on the refund policies described on page 50. Students are urged to cancel officially as soon as they decide to drop the course. In most cases, without official cancellation, students are responsible for the the total course costs after the fourth week regardless of whether they have been attending class or intended to cancel.

If you are paying your own tuition and fees because you were not able to obtain delayed payment, notify the Extension registration office in 101 Westbrook Hall that you have applied for financial aid. They will check for admission, academic standing and University holds and will enter your status on the financial aid system, which will facilitate processing of your aid. Issuance of your aid may be delayed for several weeks if you do not receive delayed payment.

If your financial aid award exceeds the charges to your STARS account and you choose to pick up your check for the remaining balance at the Check Disbursement Office, you must show a picture ID—either a University of Minnesota ID or a driver's license.

Students who drop below or exceed the number of credits on which their aid is based may not be able to obtain the aid or may be required to pay back all or part of the award.

Programs

Military personnel—Please read the listing on pages 30-34. Students registering under the authority of the Cold War Veterans Bill (Chapter 34, Title 38, U.S. Code), should refer to page 30.

Business Firms—Many business firms are willing to help subsidize the education of their employees. Before registering, students are urged to talk with a company personnel officer about possible tuition payment or reimbursement that may be available for Extension classes.

Minnesota Part-Time Student Grant Program—The MPTSGP has been merged with Minnesota State Grant described below.

Minnesota State Grant—The MSG is administered by the Minnesota Higher Education Coordinating Board. It provides funds for part-time or full-time undergraduate study. Eligibility requirements are: U.S. citizen or permanent resident of the United States; Minnesota residency; enrollment in course work applicable to a degree or certificate program and maintenance of satisfactory academic progress; registration for three or more credits per term; and demonstration of financial need. Recipients must register for 15 credits per term to be considered full-time. In addition, applicants must not already have earned a bachelor's degree and must not have completed four years of education on a full-time basis beyond high school. Applicants use the FAFSA application, which is available at Financial Aid, 210 Fraser Hall, or the CEE Counseling Office, 314 Nolte Center. Call CEE Counseling (625-2500) for a set of procedures outlining the steps which must be followed.

Federal Pell Grant—The Pell Grant is a federal aid program designed to provide financial assistance to part-time or full-time undergraduate students who do not have a prior bachelor's degree. Students must be registered for one or more credits a quarter. Pell applicants must be U.S. citizens, perma-

nent residents, or eligible noncitizens. Independent Study (correspondence) courses are not covered by Pell funds. *Recipients must be admitted to a University of Minnesota degree- or certificate-granting program and must maintain satisfactory academic progress in order to receive funds.* Simply registering for and attending classes does not constitute admission. If in doubt, students should check with the CEE Counseling Office, 314 Nolte Center (625-4334). Applicants use the ACT application, which is available at CEE Counseling, 314 Nolte Center, or from Financial Aid, 210 Fraser Hall. Contact the CEE Counseling Office for a set of procedures outlining the steps which must be followed. Procedures are revised yearly, or when the need arises.

Campus-based aid—Full-time undergraduate and half-time graduate students will be considered for campus-based aid. Recipients must be admitted to a degree or certificate-granting program. Most campus-based aid is restricted to students who do not already have a bachelor's degree. Programs include Federal Supplemental Educational Opportunity Grant, Office of Minority and Special Student Affairs (OMSSA) grants, Federal Perkins Loan, Federal and State College Work-Study, and University scholarships, grants, and loans. The priority application deadline for campus-based aid is April 30, 1993. Applicants use the FAFSA application which is available at CEE Counseling, 314 Nolte Center (625-2500) or the Office of Student Financial Aid, 206 Fraser Hall (624-1665).

Tuition Assistance Program/Student Parent HELP Extension Program—Adult undergraduate part-time students who have had to delay or interrupt their education for a total of three years or more may be eligible. These grants cover tuition, fees, and books for one or two Extension or Continuing Education for Women credit classes a quarter. The years counted do not need to be consecutive. Applicants must demonstrate financial need but not be served by other

grants, scholarships, or tuition reimbursement, or have other aid which is insufficient to cover tuition, fees, and books. Eligibility is based on current income, household size, and special expenses. Recipients need to be admissible to the University of Minnesota, but formal admission is not required. Applications are accepted quarterly and are available at CEE Counseling, 314 Nolte Center (625-2500).

CEE Scholarships: IDS Minority Access and Retention Scholarship, Nolte Scholarship, Schott Scholarship, Women's Christian Association Scholarship, Mucke/Roff Scholarship, and Remington Scholarship—These scholarships are intended for adult part-time Continuing Education and Extension students who have financial need but are not served by other grants, scholarships, or tuition reimbursement, or have other aid which is insufficient to cover tuition, fees, and books. Applicants must have a gap of at least three years in their education, but the years counted in the gap do not need to be consecutive. Undergraduate students or students with a prior bachelor's degree who need additional undergraduate work will be considered. Awards are based on academic ability, financial need, and a statement of personal, educational, and career goals. Application priority deadlines for each quarter are: fall, July 9, 1993; winter, October 8, 1993; spring, January 7, 1994. Applications will be accepted for four weeks beyond each priority deadline if ample funds remain. For additional information about each of the scholarships, please contact CEE Counseling, 314 Nolte Center (625-2500).

Semester Classes—Credits for semester classes will be prorated for financial aid. Two thirds of fall semester credits will be counted toward fall quarter; one third will be counted toward winter quarter. One third of spring semester credits will be counted toward winter quarter; two thirds will be counted toward spring quarter.

Financial aids

Financial aid for students with disabilities—In addition to the financial aid programs listed in this section, students with disabilities may contact the offices listed below about additional financial aid options and services.

Division of Rehabilitation Services—Some financial aid help and vocational counseling may be available through the Minnesota Division of Rehabilitation Services. For information, contact the DRS Liaison at Disability Services, 16 Johnston Hall (624-4037). The Division of Rehabilitation Services office in your area can also supply you with information.

Blind students may call the Extension registration office (624-5577) concerning tuition exemption for Extension classes. Counseling regarding other financial assistance is available through the Minnesota State Services for the Blind and Visually Handicapped, 2200 University Ave. W., Suite 240, St. Paul, MN 55114-1840; telephone 642-0500 in the Twin Cities or toll free 1-800-652-9000. Tape and braille materials also are available from the Communication Center of State Services for the Blind, telephone 642-0500. Assistance on campus is available from the Office for Students with Disabilities, 16 Johnston Hall (624-4037).

Special Funds—Students with disabilities may contact Disability Services in 16 Johnston Hall (624-4037) to discuss other possible financial aid opportunities and types of assistance. (Special funds are limited and students must demonstrate that they have unmet financial need.)

Veterans with service-connected disabilities may be eligible for vocational rehabilitation services through the U.S. Department of Veterans Affairs (VA). Write or call the Veterans Services Division, Room 181 Federal Building, Fort Snelling, St. Paul, MN 55111 (726-1454). Call toll free 1-800-827-1000 if outside the metro area (TDD, 1-800-829-4833).

Federal Stafford Loan and Unsubsidized Federal Stafford Loan—Applicants must be admitted to a degree or certificate program, be enrolled at least half-time and be making satisfactory academic progress. Eligibility for the need-based Federal Stafford is based on financial need. The Unsubsidized Stafford does not require need and may be available to students who do not qualify for a need-based Stafford or who are eligible for less than the loan limit on a Stafford Loan. The same terms and conditions apply for both loans except the treatment of interest. Interest is subsidized while the student is in school on the Federal Stafford. On the Unsubsidized Federal Stafford, the borrower accrues interest while in school and the origination fees are slightly higher. Undergraduate loans limits are: freshmen—\$2,625; sophomores—\$3,500; junior and seniors—\$5,500. The cumulative maximum for undergraduates is \$23,000. Graduate and professional students may borrow \$8,500 a year, with a cumulative maximum of \$65,500, which includes undergraduate borrowing. The interest rate for first-time borrowers is variable, not to exceed 9 percent. Applicants use the FAFSA application, which is available at CEE Counseling, 314 Nolte Center (625-2500) or the Office of Student Financial Aid, 210 Fraser Hall (624-1665).

Other Educational Loans—These loans include Federal Supplemental Loan for Students, Federal Parent Loan for Students, and the Student Education Loan Fund. They are available to independent students (or parents of dependent students) who are unable to qualify for other aid or need additional loan funds. Terms are not as favorable as Stafford Loan. Students should investigate all other forms of aid before applying. *Requirements include admission to a University of Minnesota degree- or certificate-granting program and maintenance of satisfactory academic progress.* Recipients must be enrolled at least half-time. For additional information and

application materials, contact the Office of Student Financial Aid, 210 Fraser Hall; telephone 624-1665.

Bank loans—Most banks in the Twin Cities area offer a “line of credit” service to handle small, intermittent loan needs. Plans vary among banks, but the borrower usually must have an account with the bank, and a line of credit for a fixed dollar amount. Students may contact a bank for further information.

Regents' Scholarships—The Regents' Scholarship program provides an opportunity for eligible University of Minnesota Civil Service and union-represented employees to take University classes tuition-free. Eligible employees are those working at least 75-percent time in an ongoing or temporary appointment; working 100-percent time during the period for which they apply for a scholarship if on a 9-month or 12-month appointment; employees on the lay-off list, and those on maternity or other leaves without pay. Employees on student or academic appointments and family members of University employees are not eligible for Regents' Scholarships.

Tuition is waived. Normally required student services fees do not have to be paid unless you want to purchase and use the service. Regents' Scholarships do not cover retroactive tuition, late fees, course fees, lab fees, books, deposits, records fees for establishing new student files, orientation fees, CEE special fees, or Boynton Health Service fees.

Regents' Scholarships cannot be used for auditing a course.

Students registering for graduate credit should indicate when they register that the Regents' Scholarship is to be applied to graduate-level tuition.

A wide range of courses are approved for Regents' Scholarships, both in day school and Continuing Education and Extension, *but note the following exceptions*: CEE Independent Study, TV and correspondence courses offered by CEE Independent Study, Depart-

ment of Professional Development and Conference Services seminars and workshops, Cardiovascular Perfusionist Certificate, mini courses offered at Coffman Union and the St. Paul Campus Student Center, Rec Sports mini courses, CME seminars, courses and workshops offered for Continuing Education Units (CEUs), Research Explorations, and MacPhail Center courses. Compleat Scholar and Practical Scholar courses are not covered by Regents' Scholarships but reduced tuition is available to University employees; see information below.

A separate application must be completed for each course. (Employees may take as many classes for credit per term as their department approves.) The applicant's signature, as well as the signatures of both the supervisor and department head are required (both signatory spaces must be completed). Applications should be sent to Human Resources Information Services, Suite B-2, 1313 Fifth Street S.E., Minneapolis, MN 55414.

Applications are processed within 48 hours and returned by campus mail (U.S. mail for outstate campuses). There are no exceptions to the processing time and mailing policies; please plan accordingly to avoid late fees. Check with your supervisor for special departmental policies concerning Regents' Scholarships. If you have questions or need additional application forms, please call University Personnel at (612) 627-4505.

Students registering with Regents' Scholarships for nonlimited-enrollment credit courses may register by mail or in person during regular registration periods. Students registering for limited-enrollment credit classes with Regents' Scholarships may register beginning the second week of mail registration and thereafter. See *When and How to Register* for dates and registration hours for each term.

Be sure to include the approved Regents' Scholarship form, completed registration form, and a check made payable to the University

Military information

of Minnesota (or credit card authorization) for special, course, or late fees (if any) when completing registration by mail. No refunds will be given to students who wish to apply Regents' Scholarships toward limited-enrollment classes for which they already have registered and paid fees.

University employees, employed at least 75-percent time, who wish to take noncredit Compleat Scholar or Practical Scholar classes must pay one-half the regular tuition plus all course fees and special fees given with a course. You must submit a letter from your department head verifying employment when you register. For limited-enrollment classes, you may register starting the second week of mail registration. For nonlimited classes, you may register during regular registration periods.

Graduate Assistant Tuition Benefit Program—Graduate and professional students who hold appointments as graduate teaching assistants, research assistants, administrative fellows, and certain other professional school student positions may receive tuition benefits for credit classes in Extension. For eligibility information, contact the Graduate Assistants Office, 416 Johnston Hall; telephone 626-1310. (Classes must be 5000- or 8000-level and taken for graduate credit.) Courses must be applied to the degree program filed with the Graduate School.

Academic Staff Tuition Benefit—Faculty and professional administrative employees holding faculty appointments of 75 percent or more may register tuition-free in Extension credit classes in which space is available. Approval and employment verification from the faculty member's department head is required. Only tuition is waived; late fees, course and special fees, books, laboratory fees, and other costs must be paid by the faculty member. Certification forms and eligibility and registration information are available from Office Services (625-9864).

Other Financial Aids—A number of other financial aid options are available. Contact CEE Counseling, 314 Nolte Center (625-2500), for additional information. Extension students who have questions or problems regarding financial aid are encouraged to call CEE Counseling.

Tuition Reciprocity—Residents of neighboring states may be eligible for resident tuition rates or for reduced nonresident rates. For additional information, contact Residence Classification and Reciprocity, 240 Williamson Hall (625-2006).

Military information

Personnel

All military personnel are urged to familiarize themselves with the Registration Procedures and Information sections of this Bulletin. University regulations and procedures apply to all students unless stated to the contrary.

All branches of the Armed Services now provide Off-Duty Academic Instruction Tuition Assistance Programs for military personnel on active duty. There are no application forms necessary for admission to the Department of Extension Classes. Under these programs, eligible military personnel may be entitled to tuition assistance of up to 90 percent a quarter credit hour for approved classes. (All classes in the *Extension Classes Bulletin* are quarter credit whether designated quarter or semester length.) The remaining tuition and all fees must be paid by military personnel. Interested members of the Armed Services are urged to contact the educational officer or commanding officer of their command for proper authorization to participate in these programs. Written authorization designating classes and amount of tuition to be paid by Army, Navy, Air Force, or Marine Corps should be presented at time

of registration, at which time payment of remainder of tuition must be made. Military personnel who do not have the necessary authorization at the time of registration will be required to pay in full for their registration. When the government authorization is received, a refund for the authorized amount should be requested. Registration must be made by mail or in person at 101 Wesbrook Hall, Minneapolis campus.

Veterans

To satisfy Veterans Administration requirements, veterans registering under the G.I. Bill must enroll in courses that are applicable to degrees, certificates, or other educational objectives approved by the VA. Veterans must see an adviser at the CEE Counseling Office before registering if they have not previously reviewed educational plans and transcripts of all college work with an adviser. Call 625-2500 to make arrangements to meet with an adviser.

VEAP (Chapter 32, the Post-Vietnam Era Veterans' Educational Assistance Program) provides benefits to individuals who initially entered active duty after December 31, 1976. While serving on active duty, the serviceperson may voluntarily contribute to an educational assistance fund. Maximum entitlement is 35 months. The application form for Chapter 32 benefits is VA Form 22-1990.

Selected Reserve Educational Assistance Program (Chapter 106 of Title 10, U.S.C.), Public Law 98-525 enacted Oct. 19, 1984, revised the existing Chapter 106 program effective July 1, 1985, and transferred program administration responsibility to the VA. The reserve components in this program include the Army Reserve, Naval Reserve, Air Force Reserve, Marine Corps Reserve, Army National Guard, and Air National Guard, which are under the Department of Defense, and the Coast Guard Reserve, which is under the Department of Transportation, when it is not operating as a service in the Navy.

Eligibility is based on commitment to selected reserves for six years after June 30, 1985. Check with the reserve unit for details. Graduate degrees are not approved.

Entitlement is 36 months of full-time training or the equivalent part-time. Benefits are payable for full-time (\$140 monthly); three-fourths time (\$105 monthly); and one-half-time (\$70 monthly). For less than one-half time, the monthly benefit is \$35 a month. No allowance for dependents is made.

Reservists apply by completing form 22-1990 and DD Form 2384, Notice of Basic Eligibility (NOBE), obtained from the reservist's unit. These forms are then submitted with the information sheet to 101 Wesbrook Hall.

New G.I. Bill (Chapter 30)(Montgomery)—Provides benefits to individuals who initially entered active duty after July 1, 1985, and meet qualifications. To check, call the Veterans Administration at 726-1454.

Veterans Registration

Before registering, please read pages 11-16 in regard to registration procedures.

Tuition and fees—Veterans must pay at the time of registration. They will be reimbursed later or paid a monthly allowance.

Certification for degree programs—Veterans must be certified every quarter. Each time a veteran registers for Extension Classes and wishes certification to the Veterans Administration, a G.I. Bill Information Sheet must be completed. Call 624-2388 to request copies of the G.I. Bill Information form. Please complete only one information sheet for each registration period. (Fall quarter and semester are considered one registration period.)

If the student registers by mail for limited-enrollment classes and any of these classes has closed, the G. I. information sheet will be returned and must be revised. Veterans who wish to add classes to their registration should

Military information

return the corrected information sheet along with the additional registration forms and payment. Those who do not wish to add classes to their registration should return the corrected information sheet to 101 Wesbrook Hall along with a note indicating that registration is completed and certification to the Veterans Administration should be made. In either case, if the veteran does not return the information sheet, no certification will be made to the Veterans Administration.

Complete only one G.I. information sheet (listing on it all the courses you are registering for that term). Do not complete a separate G.I. information sheet for each class. However, be sure to write separate checks to pay tuition and fees for each limited-enrollment class for which you are registering. Submit all documents together when registering (registration forms, tuition checks, and one completed information sheet).

Cancellation and transfer—When veterans cancel or transfer classes, they must notify the Extension Veterans Office. This is especially important when it affects the total credit load. Transfers to or from day school must be noted with a form A19a, which is obtained from the unit the veteran is leaving. In-person registration is encouraged for those veterans registering for the first time under the G.I. Bill.

Payments—The amount of the monthly payment is determined by credit load. Credit minimums are as follows: for full-time benefit, 12 credits; for three-fourths time benefit, 9 credits; for one-half time benefit, 6 credits; for less than one-half time, reimbursement of tuition and fees only.

Credits—When registering for both quarter and semester classes, it is important to note that any change in credit load at the conclusion of a term may result in reduction of payments. (For example: a veteran taking 8 fall quarter credits and 4 fall semester credits

is carrying only 4 credits at the end of fall quarter. To maintain full-time status he or she must register for 8 winter quarter credits and likewise, 4 spring semester credits and 8 spring quarter credits.)

Advance Pay—Veterans registering for at least half-time benefits and who have been out of school for at least one full calendar month are eligible for advance pay. This can be requested by filling out an Advance Payment Request Form, obtained by writing the Extension Veterans Office, 101 Wesbrook Hall, University of Minnesota, 77 Pleasant Street S.E., Minneapolis, MN 55455, by calling 624-3341, or by filing in person at this office. Requests cannot be made later than 30 days prior to the start of classes, nor earlier than 60 days before classes begin. Students who are registering for classes (by mail) during the advance pay period and wish to apply for advance pay must include a separate written request with their registration materials. This schedule shows the last date to apply for advance pay for each term when registering by mail:

Fall Quarter:	August 18, 1993
Fall Semester:	August 18, 1993
Winter Quarter:	November 30, 1993
Spring Semester:	November 30, 1993
Spring Quarter:	February 22, 1994

A 30-day deferment of tuition will be given only to veterans who apply for advance pay within the time listed above. No other deferment will be given. Veterans who receive a tuition deferment must pay the tuition not later than 30 days after classes begin. Failure to do so will result in the placement of a hold on the student's records and cancellation of certification to the VA effective the beginning of the term.

Satisfactory Academic Progress—Established standards of satisfactory progress can be found in the individual college bulletin for each degree program. Veterans who are not yet admitted to a degree program will be held

to the CEE academic progress standards as described in the degrees section of this bulletin. In the past, VA regulations have changed often and without advance notice. The information in this section was correct when this Bulletin went to press, but is subject to change without notice.

The VA has established these guidelines for reporting of nonpunitive grades:

1. Any grade of "N" will be reported to the VA. The VA will adjust benefits retroactive to the beginning date of the term, resulting in an overpayment.
2. A grade of "W" will be reported to the VA if the veteran cancels a class 30 days after the beginning date of that term. The VA will adjust benefits back to the beginning date of that term, resulting in an overpayment.

If the veteran cancels the class within 30 days of the beginning of the term, the VA will adjust the award effective the first of the month following the change in the credit load.

3. Any grade of "I" will be reported to the VA if it is not made up by the end of the term in which the veteran is enrolled. The VA will adjust benefits back to the beginning date of the term in which the "I" was assigned, resulting in an overpayment.

It is the veteran's responsibility to keep informed regarding current VA rules.

Students who have questions should call the appropriate number listed below:

- Extension Classes G.I.
Certification: 624-3341
- Day School G.I. Certification: ... 625-8076
- Independent Study G.I.
Certification: 624-0000
- Advising and Counseling: 625-2500
(necessary course work—degree planning)
- Unsatisfactory Progress
Problems: 625-8076

Other Services

Tutorial assistance—Veterans enrolled under the G.I. Bill (does not include chapter 106) are eligible for tutorial assistance in those courses in which they are showing academic deficiency. This is in addition to the regular monthly rate of educational assistance allowance payable while in pursuit of the approved program of education. Tutorial assistance is limited to a maximum of \$100 a month, with no entitlement charge for the first \$600.

Veterans Vocational Rehabilitation—Veterans with service-connected disabilities may be eligible for vocational rehabilitation services through the Veterans Administration. Write or call the Veterans Assistance Center, Federal Building, Fort Snelling, St. Paul, Minnesota 55111; 726-1454 or 1-800-827-0646.

State of Minnesota—Department of Veterans Affairs. Minnesota law provides that a veteran who has exhausted through use all of his or her federal educational benefits and who is enrolled in a university of higher learning in the State of Minnesota is eligible for a one-time grant of \$350. Applicants must demonstrate financial need and must be a resident.

Any dependent of a prisoner of war or person missing in action who was a resident of Minnesota at the time of entry into the armed forces may attend a state-supported vo-tech without charge or tuition. Such dependents may attend private institutions and may be reimbursed for tuition and fees at a rate not exceeding the tuition at Minnesota public institutions. Eligibility exists until the dependent has earned a bachelor's degree or certificate of completion.

Children of veterans who died of service-connected causes may be eligible for tuition benefits or stipends while attending institutions of higher learning. Contact the Department of Veterans Affairs.

Academic Progress

Inquiries should be directed to the Department of Veterans Affairs, State of Minnesota, Veterans Service Building, St. Paul, MN 55155. Telephone 296-2562.

Prerequisites

A prerequisite indicates competence needed to enter a course. It may be a preliminary course, experience, or approval required before a course may be taken. Students will find a course prerequisite (if any) listed at the end of the course description. Usually there is no prerequisite for beginning courses. Most advanced courses do have prerequisites and should not be attempted unless the student has had the stated previous course or its equivalent. Occasionally, students who have had the equivalent study, training, or experience related to the course desired may be exempted from the prerequisite by the instructor.

If an instructor decides that a student is not qualified once the class has begun, the student may be permitted to transfer to another course without penalty or cancel with a full refund under the following conditions: The student must obtain from the instructor a written statement explaining that the student does not have the necessary background or prerequisites to complete the course. This statement should be obtained as early in the quarter as possible and must be obtained and submitted by the fourth class meeting. To transfer to another class, the student also must have written permission from the instructor of the class he or she is entering if the class has met one or more times. Since most instructors are reluctant to give permission for a student to enter a class that has met two or more times, transfers should only be considered very early in the term. To receive a full refund (minus a \$5 cancellation fee), the student must officially cancel by mail or in person using a cancellation form available from the registration office in 101 Wesbrook Hall. Cancellation should be done as early as possible in the term and must be completed

by the fourth class meeting. Cancellations after the midpoint of any term may encounter grade recording delays. See *Transferring Classes, Cancellations, and Refunds* in the *Rules, Regulations and Policies* section. A prerequisite course usually may not be taken for credit after the advanced course has been satisfactorily completed.

Course numbers beginning with the numeral "8" are open only to students **admitted** to the University of Minnesota Graduate School.

Academic Progress

For students not held to other college, department, or program academic standards, CEE will determine scholastic standing by evaluating satisfactory progress with the following criteria:

Completion of two-thirds (66%) of total credits for the review period with grades of A, B, C, or S. Grades of D, N, I, and F are not considered satisfactory. Grades of W, V, or X are not included in this calculation.

The formula for determining satisfactory progress is as follows: (Total credits graded A, B, C, or S) *divided by* (Total credits graded A, B, C, D, F, S, N, or I) *equals* 66%.

Grades in repeated courses and noncredit remedial courses are considered in total credits.

Students who do not meet the criteria for good academic standing will not be eligible to receive financial aid, veterans benefits, and specially funded programs.

Students determined not to be in good academic standing will have an opportunity to appeal their status if there is additional information to present which may change their academic standing.

Students are encouraged to contact an academic progress adviser at 625-2500 for more information and assistance in reviewing options, study skills, and steps that might improve academic standing.

Students admitted to certificate programs who do not register for at least one credit within six consecutive quarters will be withdrawn from their certificate programs.

Grades

A-F Grading System—Four permanent grades, A (highest), B, C, and D (lowest), indicate completion of a course. The grade F represents performance that fails to meet basic course requirements and is unworthy of credit. The A-F grading system is almost always compulsory for courses in a student's major. Check with an adviser at 625-2500 for specific information.

Note—The Carlson School of Management also awards plus/minus letter grades for their students. For Carlson School grading information, please call 624-3313.

S-N Grading System—The S-N system represents an alternative to the A-F system. S represents achievement that is satisfactory to the instructor for the class in which the student is registered. (The standards for S may vary from one class to another.) The symbol N, which stands for no credit, is assigned when the student does not earn an S and is not assigned an incomplete (I).

Students wishing to take courses under the S-N grading system should be aware of the limitations placed on the system by the college in which they intend to earn a degree. Each college determines to what extent and under what conditions each system may be available to its students. Any college may specify what course or what proportion of courses taken by its students or by prospective students must be on which grading system. The A-F and S-N grading systems cannot be combined in a single course by a student. Students may receive grades only from the grading system under which they are registered.

Choice of A-F or S-N grading system must be indicated for each course listed on the

registration form at the time of registration and may not be changed after the second week of a quarter or the third week of a semester without CEE Scholastic Committee approval (there is no fee for changing). Instructors are not authorized to change students' grading systems. Changes can be made in person or by writing the Department of Extension Classes, 101 Westbrook Hall, University of Minnesota, 77 Pleasant Street S.E., Minneapolis, MN 55455 (*telephone calls are not acceptable*). **If the student does not specify on the registration form the grading system desired, the A-F system will apply.**

A symbol of I (incomplete) is a temporary grade. **Stopping attendance without official cancellation will result in an F or N grade.** An I will be assigned when, in the opinion of the instructor, there is a reasonable expectation that the student can complete successfully the work of the course. Student and instructor should arrive at a clear understanding in advance as to whether the student may receive an I and what the conditions will be. An I that is not made up by the end of the next quarter of registration becomes an F or N, depending on the grading system under which the course was taken. When an I is changed to a permanent grade, the I is removed from the student's record. Veterans are advised to read information under *Academic Progress*, page 34.

The symbol K (continuing) is assigned by an instructor to indicate that the course is still in progress and that a grade cannot be assigned at the present time. Upon completion of the course, a permanent grade is assigned.

The symbol X (not to be confused with registration for extra credit) may be reported in continuation courses in which a grade cannot be determined until the sequence is completed. Upon completion, a separate grade is substituted for each X.

The symbol W indicates official cancellation without grade. It is assigned in all cases

Grades

of official cancellation from the third week through the sixth week of any quarter, or the ninth week of any semester, or the midpoint of any special term, regardless of the student's standing. After that time, the symbol W is assigned only if the student is granted approval by the CEE Scholastic Committee. If the student stops attending without official cancellation, the instructor will assign the grade of F or N, depending on the grading system under which the course was taken.

It is advisable, therefore, that any student experiencing difficulty in a class after the sixth week of any quarter, or the ninth week of any semester, or midpoint of any special term, discuss the matter with a CEE adviser immediately at 625-2500.

The symbol V (visitor) indicates registration as an auditor or visitor (see Auditors, page 42).

Grade-Point Average—For purposes of determining grade-point average, grade points are assigned to the permanent grades as follows: for each credit of A, 4 grade points; B, 3 grade points; C, 2 grade points; D, 1 grade point; F, 0 grade points. A student's grade-point average is determined by dividing the sum of grade points by the sum of credits attempted, and passed. Credits taken on the S-N grading system are not usually included in the calculation of the official university grade-point average shown on transcripts; check with your college office. (Written instructions on how to compute your grade-point average are available from CEE Counseling. Please call 625-2500 to request them by mail.)

A student who is considering repeating a course for which he or she has earned credit should check with an adviser at the CEE Counseling Office (625-2500) before registering. Each college within the University determines its own policy and procedures on repetition of courses for credit and recognition of grades.

Grade reports and transcripts

Two types of services are available to obtain official transcripts: regular service and rush service. (Official transcripts are certified and signed by the University Registrar.) Regular service is available for \$3 a copy. Processing time for regular service is two to three working days; after processing, your copies will be mailed to the places you have specified. Rush service on your official transcript requests is available for \$9 a copy. Rush service guarantees your transcript will be issued to you in person or put in the mail on the same day the request is received. You must have a picture I.D. (student identification card, current passport, or driver's license) to receive over-the-counter rush service. Prepaid courier service may also be requested for both regular and rush service. Visit the transcript service (155 Williamson Hall, Minneapolis, or 130 Coffey Hall, St. Paul) for more information or call 625-5333.

Official transcripts can be requested by mail. Requests can also be dropped off at the location below. No telephone or FAX requests are accepted. Requests should include your full name, University I.D. number, social security number, date of birth, dates of enrollment and complete address(es) for mailing the transcripts. Send your requests to the Certifications Unit, 150 Williamson Hall, 231 Pillsbury Drive S.E., Minneapolis, MN 55455. Your request must include a check or money order payable to the University of Minnesota for \$3 or \$9 a transcript.

You may pick up an unofficial copy of your record by making a request (picture I.D. required) at the transcript window in 150 Williamson Hall. There is no charge for an unofficial copy; however, there is a limit of one copy per day.

Extension grades and credits are automatically recorded for undergraduates on college (day school) transcripts. It is not necessary to request that your grades be transferred to

your college record. Graduate and professional school students must petition for transfer of Extension credits to graduate or professional school records, however. Complete a "Request for Transfer" form at the Extension Classes Registration Office, 101 Westbrook Hall, or at the Student Relations Unit, 150 Williamson Hall (625-5333).

Official quarterly reports of students' grades are released only by the University's Office of the Registrar and cannot be furnished by Extension offices. Grades for each term are mailed from the Office of the Registrar. You should allow four to six weeks from the close of a term for your grades to arrive in the mail and to be posted to your Extension record. If you need grades sooner, you may leave self-addressed postcards with your instructors, who will mail grades immediately following the end of the term.

Student identification card (I.D.)

A University identification number is assigned to your undergraduate transcript when you register for Extension classes. Extension students admitted to a college of the University are eligible for a University I.D. card and are encouraged to obtain one. Students not admitted to a college may purchase an I.D. card for \$5. To purchase an I.D. card, obtain an authorization for \$5 from the Bursar's Office and bring it to the Office of the Registrar where your student status will be verified.

Always include the I.D. number when you register or complete other University forms. Students registering for the first time or those who have not registered since 1988 should allow four weeks to process their record before requesting a card. A paid fee statement (your registration confirmation) and picture I.D. can be used to request student services instead of the I.D. card.

The Office of the Registrar, 150 Williamson Hall, is open 9 a.m. to 5:30 p.m. on Monday and 8 a.m. to 4 p.m., Tuesday through Friday,

and has extended hours the first three days of every quarter. Call 625-9357 for details. For more information, contact the CEE Counseling Office (625-2500).

Credit and no credit registrations

Credits

All credits listed in the class description are QUARTER credits even though some classes meet on a semester-length schedule. Each credit usually requires, on the average, a total of three hours a week of a student's time, counting both in-class and out-of-class time.

1. **"Degree credit"** means that the credits earned in a course may count toward the total number of credits required for either a degree or certificate program. A student who applies to a degree program should be aware that a record of all degree credits attempted in Extension Classes must be submitted at the time of application to the college offering the degree program.

A few Extension courses carry a number of credits different from the number of credits carried by the same course offered in day classes. However, if a course carries the same course number as a day course, it will usually satisfy the same prerequisite, distribution, minor and major requirements met by the day course.

Residence—Credits earned in undergraduate Extension Classes are University residence credits; however, until students have been formally admitted to the college from which they expect to obtain a degree, these credits are not necessarily considered to meet the college residence requirements of individual colleges of the University. See *Degrees and Certificates*, page 469.

2. **"Certificate credit"** means that the credits earned in a course so marked may be used in appropriate Extension certificate programs. Certificate credit courses are University-level courses but do not carry

Graduate credit

degree credit. See *Certificates*, page 483.

3. **“Entrance credit”** means that credits earned may be used to meet University admission requirements.
4. **“No credit”** means that no credit is given for the course, although grades may be assigned (except for students registered on any reduced, **no-credit tuition plan**).

Use at Other Institutions—Credits earned in Extension, like those earned in day classes, are applicable toward a degree at another institution under the policies determined by that institution.

Graduate School credit

Students who intend to pursue graduate-level course work through Continuing Education and Extension should be familiar with the instructions in both this bulletin and the Graduate School bulletin. A Graduate School bulletin may be requested from the Graduate School, 309 Johnston Hall, 101 Pleasant Street S.E., University of Minnesota, Minneapolis, MN 55455 (625-3014).

Course numbers beginning with the numeral “5” may be taken for graduate credit by qualified students only if the instructor holds a Graduate School faculty appointment and the course description includes a statement indicating that graduate credit is available.

Course numbers beginning with the numeral “8” are open only to students **officially admitted** to the University of Minnesota Graduate School.

Note that the inclusion of graduate-level courses on a University of Minnesota undergraduate transcript neither implies nor guarantees admission to the University of Minnesota Graduate School, nor does it guarantee that such course work will be approved for transfer to a Graduate School student’s degree program.

Planning a University of Minnesota Gradu-

ate School Degree Program—Students intending to apply CEE course work toward a University of Minnesota Graduate School degree must plan a coherent and relevant program of study. They are expected to review their plans with the Director of Graduate Studies or a qualified faculty adviser in the field of their choice. Special attention must be paid to the amount of course work that can be transferred to a degree program from outside the Graduate School, including from CEE.

Course work for the Graduate School’s Master of Arts in English, the weekend Master’s of Social Work, and Master of Business Taxation programs may be completed entirely through CEE registration. Students who wish to apply CEE course work toward a Master of Science degree in Food Science should consult with their Director of Graduate Study concerning the number of credits which may be transferred from CEE.

Students in all other Graduate School programs leading to the master’s degree are required to register through the Graduate School for at least 60 percent of the course work on their approved master’s degree program.

The remaining 40 percent of the course work required for the master’s degree may be transferred from approved sources. The Graduate School will consider for transfer courses that meet the following criteria:

1. The courses must be completed as an adult special, summer special, or CEE registrant at the University of Minnesota (such course work from other colleges and universities cannot be transferred), or as a formally admitted and registered student in an accredited graduate school at another university. A student may request that work be transferred from more than one such source, but no more than 40 percent of the total course work may be transferred from any combination of these sources.

2. The courses must have been taken for graduate credit and taught by faculty members authorized to teach graduate-level courses.
3. The courses must be used to satisfy Graduate School degree program requirements. Courses that are not required by the student's degree program cannot be transferred to the Graduate School transcript.

All requirements for a master's degree must be completed within seven years of the date of the oldest course work on the approved degree program, including any transfer work.

Students in a Graduate School program leading to a doctoral degree may transfer no more than 12 credits from CEE to the doctoral program.

In all cases, requests to transfer course work are subject to early review and recommendation by the student's Graduate School adviser and Director of Graduate Studies and must receive final approval from the Graduate School. Individual Graduate School programs may specify more restrictive requirements than those described above.

CEE Graduate-Level Registration and Fees—A student who wishes to receive graduate-level credit for a CEE course which is available for graduate credit must indicate this on the CEE registration form and must pay either the graduate credit tuition rate or the University of Minnesota Graduate School tuition rate.

By indicating registration for graduate credit on the registration form, you notify the instructor of the course, who then indicates on the final grade report whether the work was completed at the graduate level. If the work was completed at the graduate level and graduate tuition was paid, the course is entered onto the student's undergraduate transcript with an asterisk (*) printed next to the course listing.

A student who later wishes such work to be transferred to the Graduate School transcript must submit a copy of the undergraduate transcript to the Graduate School when filing the degree program form. This transcript must show that the work was taken for graduate credit, and must indicate a final grade for the work; course work that is "Incomplete" or for which no grade has been submitted cannot be transferred.

In order to change a CEE registration from undergraduate to graduate credit (or the reverse), students must write or go to the Extension Classes Registration Office, 101 Westbrook Hall, University of Minnesota, 77 Pleasant Street S.E., Minneapolis, MN 55455 (telephone calls are not acceptable). This may be done at any time during the period of instruction; however, no refund of tuition will be made after the third week of a term when changing from graduate to undergraduate registration. The Graduate School does not permit such change after the last day of instruction. Contact a CEE Scholastic Committee representative at 625-2500 with questions.

A regularly enrolled day school student who concurrently takes day school courses and CEE courses must register separately in day school and in CEE and must pay both day school and CEE fees.

Policy Change Effective Fall Quarter 1993—Students who register for 8000-level course work in CEE who want graduate credit must pay Graduate School tuition rates. Students who register for 5000-level course work in CEE who want graduate credit must pay either the graduate credit tuition rate or the University of Minnesota Graduate School tuition rate (for courses that are to be applied to a Graduate School program). Courses for which graduate credit is available usually include the graduate-level tuition cost and the Graduate School tuition cost after the course title.

Earning credits

If a course taken before fall quarter 1992 is approved for transfer to a University of Minnesota Graduate School transcript, the student must pay the difference between CEE and Graduate School tuition. The tuition differential to be charged will be the difference between the rates in effect at the time the credits are transferred, regardless of when the student registered for or attended the course. If the tuition is not paid, a hold will be placed on the student's Graduate School record by CEE. Check with the Extension Classes Registration Office, 101 Wesbrook Hall (625-3333), if you have questions.

Also, students who haven't taken courses at the graduate credit rate and later choose to transfer those credits to a Graduate School degree program must pay the difference between graduate credit tuition and the Graduate School tuition rate in effect at the time of transfer.

Use of CEE Graduate-Level Course Work—Registration for graduate credit and payment of Graduate School tuition rates does not guarantee that a course will be accepted for transfer to a Graduate School degree program. The use of CEE graduate-level course work to satisfy degree requirements at an institution other than the University of Minnesota will be entirely the prerogative of the student and the institution to which he or she submits the transcript, and is not the responsibility of either CEE or the Graduate School of the University of Minnesota.

Credits without class attendance

If through personal experience or occupation, students have gained knowledge which they believe should qualify them for University credit, or if they wish to work on their own to earn credit for a project, several options are available. Students may obtain information on these programs by CEE Counseling (625-2500). Following is a summary of the various options.

Independent study "Y" registration

Many degree credit courses have been identified by academic departments as courses in which students may study independently (designated as a "Y" registration) without attending class sessions. In some instances, written instructions are available; in others, direct consultation with the instructor is necessary for planning the student's work. Regular fees are charged for independent study "Y" registrations.

Independent study can be arranged for any course so identified by an academic department, whether it is offered during day or evening hours. Department and instructor approval is necessary and a special form for that purpose, with the appropriate signatures, must be presented at time of registration. Registration is then completed in the usual manner but with a capital "Y" added after the course number. For the special permission form and for further assistance in making "Y" registration, consult CEE Counseling, 314 Nolte Center (625-2500).

Extra credit "X" registration

Students may register in a degree credit course for one, two, or three extra credits (beyond those a course carries) provided the course instructor approves. Fees are charged on the basis of number of credits for which a student is registered. The student works independently, meeting requirements set by the instructor. Extra credit study allows for more intensive study of a course topic or study in a related topic in which no regular course is offered. Department and instructor approval is necessary and a special form for that purpose with the appropriate signatures must be presented at time of registration. Registration is then completed in the usual manner but with a capital "X" after the course number. For the special permission form and for further assistance in making an "X" registration, consult CEE Counseling, 314 Nolte Center (625-2500).

Directed studies, Directed research registration

A wide range of opportunities is available to Extension students for earning college credit for individually designed study or research projects. These projects may be organized around their job activities, their involvement in the community or around special interests that students have in a particular topic. A student wishing credit in Directed Studies or Directed Research should contact a faculty member in the particular area in which he or she is interested, determine if the department lists specific course numbers and titles for such registration, and obtain faculty and department approval. A special form for that purpose, with the appropriate signatures, must be presented at time of registration. Registration is then completed in the usual manner with the correct Directed Studies or Directed Research number of the department. For the special permission form and assistance in making Directed Studies or Directed Research registration, consult CEE Counseling, 314 Nolte Center (625-2500).

Special examination

Students who, through independent study, experience, or study at a noncollegiate institution have gained knowledge which is equivalent to that covered by a particular University course, may earn credit for it by passing a special examination on the subject matter covered by the course. Students who have been admitted to a college within the University should contact their college to discuss special exam arrangements. Students who have not been admitted to a college may contact an adviser in the CEE Counseling Department (625-2500) to discuss arrangements. All students must have established a University of Minnesota transcript in order to take a special examination. Not all courses are open to credit by examination, and departments may restrict its use in some cases. Students should check with their college office

to make sure the college will accept credit by special examination. There is a \$30 fee (subject to change). Contact CEE Counseling, 314 Nolte Center (625-2500).

College-Level Examination Program (CLEP)

The College-Level Examination Program has been established by the College Entrance Examination Board to enable individuals who have acquired their education in nontraditional ways to demonstrate their academic achievement. CLEP examinations in five areas—English, mathematics, natural sciences, social science/history, and humanities—are available for a fee to Extension Classes students who may be considering entering certain degree programs. Students will receive credit upon passing one or more tests, provided they have a satisfactory score and have not yet completed requirements in the appropriate area. Since the various colleges use different criteria in accepting CLEP results, for detailed information and referral, contact CEE Counseling, 314 Nolte Center (625-2500).

University College independent study (UC 3075)

University College provides an undergraduate independent study course listing (UC 3075) available to students who wish to pursue projects that go beyond the scope of any single department or college of the University. Projects are interdisciplinary in nature and/or are done in departments that do not have an appropriate undergraduate independent study course. Students will be asked to consult with a faculty monitor and to complete the UC 3075 Independent Study Contract prior to registering. Students may take 3 to 15 credits of UC 3075. Further information may be obtained from the Inter-College Program Office of University College, 107 Armory (624-2004).

Research Explorations

Through the Research Explorations (REX) program, you can assist a University faculty member or other researcher as a volunteer member of a research team. REX participants help in data collection, laboratory or field experiments, information processing, animal care, interviewing, or any number of activities associated with a research project. Time requirements vary from full-time one-week or two-week summer programs to part-time commitments of a few hours a week spread over several weeks or months. Through directed-study credit opportunities (see description above), it may be possible to incorporate college credit into your REX participation. For more information, contact Research Explorations at 626-0214.

CEE Independent Study

The Department of Independent Study offers a wide variety of courses by the correspondence method. Courses marked in this Bulletin with (IS) following course titles are also available through CEE Independent Study. Independent Study courses can be used toward fulfilling distribution requirements in most University undergraduate programs. All Extension certificate programs accept such credits. Credits earned through the Department of Independent Study may be used to satisfy residence requirements, with approval from your college. Please check with your adviser if you are not sure about applying Independent Study credits toward your program.

More than 350 college courses and a number of high school courses are available through CEE Independent Study. Using textbooks, a printed study guide, and sometimes other materials, you work through lessons at your own pace. You submit assignments and exams for evaluation by a University instructor. You can register at any time, and you have up to a year to complete your course. With

your self-motivation and written feedback from your instructor, you can earn University credits at home. Credit cards and partial payments are accepted.

For people who like learning in a variety of ways, many Independent Study courses come with audiocassettes, videocassettes, or computer disks, in addition to a written study guide. The *Independent Study Bulletin* gives details for each course about what materials are included and their costs. The tapes are also available at no charge for use in the Learning Resources Center of Walter Library, Minneapolis campus.

Several video-assisted courses are also broadcast each year on KTCI (Channel 17) in the Twin Cities and on other Minnesota public television stations. Graduate credit is generally available for advanced-level television courses. Check the *Independent Study Bulletin* for specific courses and broadcast schedules.

For information on courses, policies, and how to register, call, write, or stop in for an *Independent Study Bulletin*: 45 Westbrook Hall, 77 Pleasant Street S.E., University of Minnesota, Minneapolis, MN 55455; telephone (612) 624-0000.

Auditors (no credit)

A student who wants to attend classes, but does not wish to do all the required work, may register as an auditor by placing an "X" in the appropriate box on the registration form. An auditor is expected to attend class. Non-attendance may result in an "N" grade recorded on the student's transcript. Auditor status carries no credit. One may not later take for credit a course which has been audited; exceptions to this rule may be allowed upon consultation with an adviser in the college or school concerned. Auditors pay the same tuition and fees as other students. In very rare instances, auditors will not be permitted in some classes.

Requests for change from credit registration to audit registration are made in person or by writing the Department of Extension Classes, 101 Wesbrook Hall, University of Minnesota, 77 Pleasant Street S.E., Minneapolis, MN 55455 (625-3333). After the sixth week of a quarter class or the ninth week of a semester class, requests for change must be approved by the CEE Scholastic Committee and the instructor; approval is granted only if the student is doing passing work at the time of the request. **No student whose tuition and fees are paid in whole or in part by military, Veterans Administration, company, Regents' Scholarships, or other scholarship funds may register as an auditor.** Changes from audit to credit will not be allowed after the second week of the quarter or third week of the semester.

Courses audited are officially recorded on the student's University record and transcript. (See also *Special Plans*, below.)

Continuing Education Units (CEUs)

The CEU is a nationally recognized unit of measurement awarded to participants in qualifying noncredit continuing education programs. It can become a part of your permanent University record. For a descriptive brochure about earning CEUs, contact the Department of Professional Development and Conferences Services, 131 Nolte Center, on the Minneapolis campus; telephone 625-6616.

Professional Development and Conference Services

The Department of Professional Development and Conference Services (PDCS) presents noncredit programs that enhance the professional skills and continuing education of adult learners.

PDCS plans and conducts educational programs in collaboration with faculty, depart-

ments, colleges and professional schools, institutes, research centers, and other organizations. These programs utilize faculty expertise and the latest forms of educational technology to provide the most accurate and up-to-date information available. The department offers courses in a wide variety of fields, including science, technology, and engineering; health and human services; government, business, and nonprofit organizations; and arts, humanities, education, social and behavioral sciences.

Telephone 625-6616 or FAX 626-1632 for a listing of current and future PDCS programs.

Special plans

◆ **Half-price plan**—The Department of Extension Classes no longer offers the option of taking credit courses, previously marked with a diamond (◆) symbol, for no-credit registration at half tuition.

Advanced High School Student Services Office—Reduced no-credit registration for youngsters 12 to 16 has been discontinued. Continuing Education and Extension has an office to counsel, advise, and provide advanced placement information to young adults who have not yet graduated from high school and who want to take college classes. Interested students who are juniors or seniors in high school may contact the Advanced High School Student Services Office at 626-1666.

62-Plus plan—Individuals age 62 or older may register free for no credit in regular credit classes. For further information on 62-Plus, see below. There are no late fees for persons 62 and older.

The Compleat Scholar/Practical Scholar

Noncredit Compleat Scholar and Practical Scholar courses are flexible and non-competitive courses designed for persons interested in learning for their personal sat-

isfaction. There are no examinations, no transcripts, and no grades. See the *Noncredit Course Offerings* section of this bulletin for a list of course titles and complete descriptions.

Study Abroad (credit)

Global Campus study abroad programs provide students an opportunity to broaden their international and cross-cultural awareness as they earn University of Minnesota credit. Programs are cosponsored by University academic departments, and credits may be used to fulfill distribution requirements, second language requirements, or major requirements for degree programs. Anyone is eligible to apply; participants need not be enrolled in a degree program. University financial aid may apply.

For information, contact the Global Campus, (612) 625-3379, or visit their office in 106 Nicholson Hall. Also see page 466 in this Bulletin.

Study and Travel (noncredit)

For information about **Compleat Scholar Weekends**, see the noncredit section of this Bulletin, page 426.

Continuing Education for Women

Continuing Education for Women offers credit and noncredit classes in times, formats, and locations designed to accommodate student needs. Most credit classes meet once or twice a week during the day at off-campus locations. See the credit course listing on page 365. Noncredit classes are offered as part of the Compleat Scholar and Practical Scholar curriculum and provide participants with an opportunity to continue learning in a wide variety of areas without grades, exams, or extensive homework. See The Compleat Scholar and The Practical Scholar section of this bulletin for a list of noncredit course titles and complete descriptions.

The Continuing Education for Women Mucke/Roff Scholarship Fund was established for students registering for Continuing Education for Women credit and noncredit courses. Awards are made on the basis of scholastic ability, motivation, previous achievement, financial need, and realistic plans. Information is available from the CEE Counseling Office, 625-2500.

Persons 62 and older

Minnesota state law allows persons 62 and older to register in credit classes at reduced cost (credit registration) or no cost (no-credit registration) on a space-available basis. Only tuition is reduced or waived; course fees and special fees, if any, must be paid.

Credit course registration—Credit courses may be taken for University credit by persons 62 and older for only \$6 a degree, certificate, or entrance credit hour plus any fees. Or these courses may be taken free for no credit. For classes with limited enrollment, registrations will be accepted starting the second week of mail registration. For information on the availability of space in limited-enrollment classes, call 625-3333 during registration dates specified on page 8.

When registering by mail, students should be sure to include the completed registration forms and a check made payable to the University of Minnesota for special or course fees. If registering for credit, be sure to include \$6 a credit plus any fees. A separate check is required for each limited-enrollment class a student wishes to take.

For nonlimited-enrollment classes, students may register during regular registration periods by mail or in person.

Noncredit Compleat Scholar and Practical Scholar Courses—Persons 62 and older may register in noncredit Compleat Scholar and Practical Scholar courses and receive a 10-percent discount on tuition. The tuition cost for persons 62 and older is listed in

parentheses after the regular tuition in the course description. Participants must pay any course or special fees. For classes with limited enrollment, registrations will be accepted starting the second week of mail registration. For nonlimited-enrollment classes, students may register during the regular registration periods. This discount may not be combined with other discounts.

Late fees—There are no late fees for persons 62 and older registering under the reduced tuition option.

Be sure to see the sections on registration instructions and registration dates for each term at the beginning of this bulletin.

For general information, call 625-3333.

Rules, Regulations, and Policies

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Fee statements

When you register, you will receive a confirmation of registration; this is your fee statement. Save this document; it is proof of enrollment.

Students are urged to save and carry their fee statements which are required as identification for a number of University activities and services.

A duplicate fee statement may be obtained at 101 Wesbrook Hall in the event the first one is lost or illegible.

Changes in course information

All changes occurring after the publication of the Bulletin are posted in the desk copy bulletin at each of the registration locations. Students registered in the previous two years receive current, updated information in Info, a newsletter for Extension Classes students.

Attendance in classes

Students (including auditors) are responsible for attending classes in which they are registered. (See also *Credits Without Class Attendance*, page 40.) A student who cannot attend a class session should arrange with the instructor—in advance, if possible—to make up the work.

How to cancel/add classes

You must officially cancel in person or by mail. Simply stopping class attendance does not constitute cancellation; you will receive an F or N grade if you do not cancel officially.

Students who wish to cancel/add classes or class sections after being officially registered may do so, if space is available, either in person at 101 Wesbrook Hall or by mail. **Students may not cancel/add between terms** (except for fall quarter and fall semester, through the second week of classes).

Students who wish to cancel/add after an initial registration will be subject to the following fees and conditions listed below:

Prior to and during the first week of classes	None
During the second week of classes	\$10 (if accepted)
During or after the third week of classes	\$20 (if accepted)

Students who wish to cancel/add after the first week of classes must meet the following conditions:

Cancel/Add During the Second Week (Quarter, Semester, Special Term, Special Class)—No cancel/add will be accepted after the second class meeting without written permission of the instructor of the class the student wishes to enter.

Cancel/Add During the Third Week or After (Quarter, Semester, Special Term, Special Class)—No cancel/add will be approved unless students have attended the second week of the class into which they wish to transfer, and have obtained written permission from the instructor of the class they wish to enter. **(Scholastic approval is required after the sixth week of the quarter or the ninth week of the semester. Contact the registration office or the CEE Counseling Office at 625-2500 for information and petition forms.)**

There will be no late fee if: (1) University requests the cancel/add be made; (2) the cancel/add is required by an unacceptable grade in prerequisite course (see *Grades*, page 35); (3) the cancel/add is required because of University cancellation of course in which previously registered, provided such cancel/add is made within one week from date of cancellation of class; or (4) between sections of a course with the same course number.

Note—Those wishing to take a University Extension class for no credit, but who need a transcript and a record of their registration, must register as auditors and pay full tuition.

Students are requested to present fee statements at the time of transfer.

Veterans—Any veteran registered under the G.I. Bill must notify the Extension Veterans Office, 101 Westbrook (624-3341), when canceling and adding classes. This is essential when it changes the credit load.

Admission to a degree program

A student may take Extension classes without going through formal admissions procedures. However, if students plan to complete a degree program through the Department of Extension Classes, they should consult the CEE Counseling Office, 314 Nolte Center (625-2500). Please read the sections on *Day School Students*, *Degree Programs*, and *Graduate School Credit* (check the *Index* for page numbers).

Transfers from other institutions

Students who have had university or college work other than at the University of Minnesota, and who intend to work on a degree or certificate program in Extension should contact the CEE Counseling Office, 625-2500, to have their previous course work evaluated. It is important to bring a transcript when meeting with an adviser. Transcripts may be obtained from the registrar of the institution previously attended. Generally, credits from a nationally accredited two- or four-year college are accepted by the University of Minnesota provided that the courses or their equivalents are applicable to the degree or certificate program for which the student is applying.

Access to student educational records

In accordance with regents' policy on access to student records, information about you generally may not be released to a third party without your permission. (Exceptions under the law include state and federal educational and financial aid institutions.) The regents'

Cancellations

policy also permits you to review your educational records and to challenge the contents of those records.

Some student information—name, address, telephone number, dates of enrollment and enrollment termination, college and class, major, adviser, academic awards and honors received, and degrees earned—is considered public or directory information. You may prevent release of public information outside the University only during your terms of enrollment. To do so, you must notify the records office at 625-5333.

Students are advised that disciplinary action will be taken if academic records are forged or altered.

You are notified annually of your right to review your educational records. The regents' policy, including a directory of student records, is available for review in 150 Williamson Hall, Minneapolis, and at records offices on other campuses of the University. Questions may be directed to the Office of the Registrar, 150 Williamson Hall, (612) 625-5333.

Cancellations

How to drop a course

Students who wish to cancel a class or classes must do so officially, either in person, by FAX, or by writing to the Department of Extension Classes, 101 Wesbrook Hall, University of Minnesota, 77 Pleasant Street S.E., Minneapolis, MN 55455. By so doing, they will, if eligible, receive a refund (see *Refunds*, page 50), and will likewise insure entry of the appropriate symbol on their grade report. If students officially cancel the first two weeks of a term, the course they cancel will not appear on a transcript.

Students who officially cancel from a class on or before the dates listed below will automatically receive a "W" (withdrawal) on the grade report. This symbol means "official

cancellation without grade." Cancellations by mail are effective the date of the postmark (or date received if sent by campus mail or FAX). If you simply stop attending class and do not cancel officially, you will receive an F or N grade.

Cancellations are not permitted without Scholastic Committee approval after the following dates:

Fall quarter	November 5
Fall semester	November 29
Winter quarter	February 11
Spring semester	April 22
Spring quarter	May 6

Scholastic Committee approval of cancellation after these deadlines is rare and given only in cases of extenuating circumstances, usually beyond the student's control. Therefore, students are strongly encouraged to consider financial, academic, work-related, and personal circumstances that affect their classes before the sixth week of the quarter or ninth week of the semester. Contact an adviser (625-2500) early in the quarter or anytime an emergency arises to discuss your options.

College guidelines for cancellations will be strongly considered for students who are admitted to a degree program at the University of Minnesota.

Students can obtain a petition form from the registration office in 101 Wesbrook Hall or CEE Counseling in 314 Nolte Center. Instructor verification that the student is doing passing work is required. Completed cancellation forms, the petition form, and instructor's verification must be received by the Extension Classes registration office before the official start of final exam week for that term. Students will be notified by mail of the scholastic committee decision within approximately 10 working days.

Note—no instructor is authorized to accept cancellation of any registration. The

student must submit the cancellation form (in person or by mail) to the Extension classes registration office.

The effective date of cancellation will be the day on which the cancellation is received in the Extension Classes office, regardless of the date of the student's last attendance. (Cancellations by mail are effective the date of postmark or the date received if sent by campus mail.) It is important, therefore, that whenever students stop attending a class, they should officially cancel by filling out the appropriate forms at the Extension Classes office on campus at 101 Wesbrook Hall or at the MacPhail Center in downtown Minneapolis.

Do not stop payment of a check to cancel your registration. You must cancel officially by mail or in person. A check handling fee of \$20 is charged for any stop order payment and you are responsible for any tuition due up to the point you officially cancel (based on the refund schedule below). A hold will be placed on your records until these fees are paid. Contact the cashier's office in 138 Wesbrook Hall (624-6354) before you stop payment of a check for any reason.

Veterans—Any veteran registered under the G.I. Bill must notify the Extension Veterans Office, 101 Wesbrook (624-3341) when canceling a class. This is essential when it changes the credit load.

Financial Aid—Students receiving financial aid through the University of Minnesota should check with a financial aid adviser before canceling classes. Changes in credit load affect eligibility. Refunds may revert to the financial aid office, or students may be obligated for repayment of all financial aid awarded.

Cancellation of, or change in, scheduled classes (made by Department of Extension Classes)

While the Extension staff sincerely regrets to do so, it is sometimes necessary to cancel classes with insufficient enrollment. The department reserves the right to cancel, postpone, limit enrollment, split, or combine classes, and to change instructors and/or locations of classes. If Extension cancels a class, the student will be notified and will be given the opportunity to transfer into another class without a late fee or penalty. If the student does not want to enroll in another class, a full refund will be given.

Cancellation of class meetings because of severe weather conditions, other emergencies

Extension Classes are rarely canceled for any reason, including weather. However, in the event that Extension Classes are canceled, local radio stations will be notified and asked to broadcast an announcement on the day in question.

When conditions are no worse than difficult, most instructors will be in their classes. In such weather, the Extension administration does not feel it ought to decide for students whether they should attempt to go to class. If, however, conditions are worse than difficult—dangerous and/or virtually impossible—then Extension has an obligation to discourage instructors and students from risking the trip. In those cases, all classes will be canceled and the announcement made on radio and television.

Rarely are classes canceled. Winter weather in the metropolitan area, fierce as it sometimes is, is seldom bad enough for Extension Classes to make students' decisions for them. Classes have been canceled only five times in the last decade.

Refunds

A new two-part refund policy goes into effect Fall 1993:

I. Tuition Refund Schedule (credit courses only) for all students except those attending the University for the first time

	Cancellation Deadline	Cancellation Deadline			
		<u>FQ/FS</u>	<u>WQ</u>	<u>SS</u>	<u>SQ</u>
Cancellation before or during first week of term	100%	Oct.2	Jan.8	Feb.19	Apr.2
Cancellation during the second week of term	75%	Oct.9	Jan.15	Feb.26	Apr.9
Cancellation during the third week of term	50%	Oct.16	Jan.22	Mar.5	Apr.16
Cancellation after the third week of term	none				

II. Tuition Refund Schedule (credit courses only) for students attending the University for the first time (applies only during the first term of registration)

	Cancellation Deadline	Cancellation Deadline			
		<u>FQ/FS</u>	<u>WQ</u>	<u>SS</u>	<u>SQ</u>
Cancellation before or during first week of term	100%	Oct.2	Jan.8	Feb.19	Apr.2
Cancellation during the second week of term	80%	Oct.9	Jan.15	Feb.26	Apr.9
Cancellation during the third week of term	70%	Oct.16	Jan.22	Mar.5	Apr.16
Cancellation during the fourth week of term	60%	Oct.23	Jan.29	Mar.12	Apr.23
Cancellation during the fifth week of term	50%	Oct.30	Feb. 5	Mar.19	Apr.30
Cancellation during the sixth week of term	40%	Nov.6	Feb.12	Mar.26	May7
Cancellation after the sixth week of term	none				

Students who wish to cancel a class or classes must do so officially, either in person or by writing to the Department of Extension Classes.

When students cancel they may be eligible for: (1) a full refund under the conditions outlined in item 1 below; (2) a refund of tuition and any course or special fees (less any late fees) under the conditions outlined in item 2 below; or (3) a refund of part of the tuition and any course fees and special fees after the class has begun, provided that the student cancels and requests a refund within the time limits outlined in the refund schedule given above.

Students who wish to cancel a class and add another class should read the section on how to cancel/add, page 46.

If you are receiving financial aid, contact the Office of Student Financial Aid in 210 Fraser Hall (624-1665) before canceling and requesting a refund. If you drop below the number of credits on which your aid is based, you may be required to pay back all or part of your award.

1. Full refund of all tuition and course-related fees will be made when a class is canceled by Extension Classes after a student has registered in it.
2. A refund of full tuition and fees also will be made:
 - A. When a student cancels anytime before or during the first week of the term.
 - B. When a student is ill or hospitalized

and, in the opinion of a doctor, is unable to continue for medical reasons. The doctor's signed statement on the doctor's letterhead is required and must be submitted by the end of the term.

- C. To any student who has been recalled to or enlisted in military service upon presentation of military orders, provided the student would not be entitled to an appropriate grade at the time.
- D. When, in the opinion of the instructor, the student does not have the necessary prerequisites, or the student has already had the equivalent material in another course. Students seeking refunds under these conditions must:
 - 1. Ask the instructor for a note explaining that the student does not have the necessary prerequisites. Bring in the note, a fee statement, and a completed cancellation form to 101 Wesbrook Hall or submit the note and a cancellation letter by mail. It is the student's responsibility to obtain the note and to submit all documents at one time before the fourth class meeting.
 - 2. Present a transcript noting equivalent course(s), along with a fee statement and completed cancellation form, in person at 101 Wesbrook Hall or by mail. Documents must be submitted at the same time before the fourth class meeting.

Refunds for special (short) term classes will vary depending on the number of course meetings.

Late fees are not refundable in any case.

Cancellations by mail are effective the date of postmark (or date received if sent by campus mail or FAX). Refunds are based on the date of cancellation, not the number of times the student has attended class.

Refunds paid by check are mailed to the student. A minimum of two to four weeks is required for processing a refund. For tuition payment by VISA or Mastercard, refunds will be credited to your card account.

For information about other refunds, see: *Recreation Facilities*, page 446; *Health Services*, page 447; *Regents' Scholarships*, page 29.

Language laboratory

Some Extension classes may include recommended audio tape listening at the University Library Learning Resources Center. Cassette tapes are available at the center in the basement of Walter Library on the Minneapolis East Bank campus. Extension students enrolled in courses which require audio tape listening may borrow audio cassettes for out-of-building use. For details concerning tape borrowing privileges please call the center at 624-1584.

Learning Resources Center hours: 9 a.m. to 9 p.m., Monday through Thursday; 9 a.m. to 5 p.m., Friday; 10 a.m. to 2 p.m., Saturday; and 5 p.m. to 9 p.m., Sunday.

Tax-deductible educational expenses

University Extension Classes may be tax deductible if taken: (1) to maintain or improve the skills required in trade or business or required in performing a

present job; or (2) to meet the specific requirements of an employer or the requirements of law for maintaining present employment, salary, or status (provided student had previously met the minimum requirements in effect when employed). Students cannot deduct expenses for education if courses are taken: (1) to get a general education; (2) to meet the minimum requirements to qualify for or to establish a trade or business; or (3) to prepare you to return to work or re-enter any previous business or profession.

Rules, regulations

Deductible expenses include tuition, books, supplies, laboratory fees, and similar items.

Also, students may deduct the cost of driving or taking the bus from work to school. In some cases, other education-related travel and transportation expenses may be deductible as well.

Employees with qualifying unreimbursed educational expenses may deduct them only if they itemize deductions. A tax benefit is only available to the extent these expenses together with other miscellaneous itemized deductions, such as union dues, tax preparation fees, and the cost of professional books and journals, exceed 2 percent of the taxpayer's Adjusted Gross Income for the year. Self-employed individuals may deduct in full their qualifying unreimbursed educational expenses regardless of whether or not they itemized deductions.

For information call the local office of the Internal Revenue Service at 644-7515, or from outside the Twin Cities metropolitan area call toll free 1-800- 829-1040. A free IRS booklet, publication 508, Educational Expenses, may be of help.

Grievance procedures

An established "grievance procedure" exists in the Department of Extension Classes. If students believe they have a justifiable complaint about a grade or about classroom procedures, they should first confer about the problem with the instructor. Most problems can be worked out in this way. If a solution

satisfactory to them is not reached, they should state the complaint in writing to the Director of Extension Classes, 170 Westbrook Hall, who will confer with the appropriate academic department chairperson. If these procedures do not bring about a solution satisfactory to the students, the CEE or the academic department's grievance committee (a student-faculty-civil service group) can be assembled to hear the complaint. Further appeals proceed to the college-level and University-level appeal committees.

Any student who has a complaint about Extension Classes programs—services, facilities, policies and practices—is encouraged to make it known, preferably in writing, to the Director of Extension Classes.

CEE Scholastic Committee

The Continuing Education and Extension Scholastic Committee is charged with interpreting and enforcing college and University regulations relating to academic affairs. It handles requests for exceptions to registration policies and procedures, admission standards for certificate programs, and transfer of credit policies for certificate programs.

The committee seeks to maintain the spirit of the University's regulations and is empowered to make exceptions in extenuating circumstances. Students experiencing difficulty which may interfere with their course work are encouraged to contact a Scholastic Committee representative in the CEE Counseling Office, 625-2500, to discuss options.

Course Offerings

Credit Courses begin page 54. See the list of credit Continuing Education for Women Courses, page 365. Also be sure to see Noncredit Courses beginning on page 367. See the sample course description on page 13.

Sections of courses with a ★ have limits on enrollment. See When and How to Register, page 8.

See Symbols below. Maps begin page 502. Abbreviations and addresses for off-campus classes appear on pages 501 and 509.

Courses in this section are listed alphabetically by department. See page 498 for a list of Departments and Department Abbreviations, and page 500 for Buildings and their abbreviations.

Course Numbering is explained on page 497.

See Index for page numbers of individual departments.

Semester courses

The following departments offer one or more courses on the semester basis.

Chinese	German	Physics
Economics	History	

Symbols

The following symbols are used throughout this Bulletin:

- A hyphen between numbers indicates a sequence course, the units of which must be taken in order, unless otherwise indicated.
- ★ Enrollment space limited. See instructions on registration in limited-enrollment sections, page 11.
- ⊙ A joint Day/Extension class. See page 20.
- † All courses listed before this symbol must be completed before credit may be received.
- § No credit is given if credit has been received for equivalent course listed after this symbol.
- ¶ Concurrent (simultaneous) registration is allowed or required in courses listed after this symbol.
- # Consent of instructor.
- (IS) Course also available through Department of Extension Independent Study. See page 42.
- Δ Consent of department offering course is required.
- Consent of college offering course is required
- cr Credit
- Qtr Quarter
- Sem Semester
- Spec Special Term
- S/N Satisfactory/No credit grading system. See page 35.
- A/F Letter grading system. See page 35.
- Lect Lecture
- Rec Recitation
- Prereq Prerequisite. See page 34.
- Sec Section
- Grad Graduate

Abbreviations

NOTE—Campus building abbreviations are listed on page 500 (maps begin on page 502). Abbreviations and addresses for off-campus class sites (neighborhood centers) are on pages 501, 509 (maps begin on page 510). Course numbering is explained on page 497.

Credit Courses

Accounting (Acct)

(645 Management/Economics: 624-6506)

Carlson School of Management

Textbooks for most courses in Acct are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also General College)

A major in accounting can be completed in the evening.

The Carlson School of Management offers the Bachelor of Science degree in Business, which includes the Accounting Program as a major. Students are referred to the Carlson School of Management Bulletin for information regarding the pre-admission requirements associated with the first 90 degree credits. Interested students should discuss plans with an advisor in CEE Counseling (625-2500).

Core Requirements for General Management and Accounting Students

Note: Students admitted to the Carlson School of Management before fall 1990 are responsible for the requirements published in the Management Bulletin current at the time of their admission. Contact the Undergraduate Studies Office at 624-3313 for more information.

Core—28 credits (A-F required):

Acct 3001—Introduction to Management Accounting

BFin 3000—Finance Fundamentals

IR 3002—Personnel and Industrial Relations

Mgmt 3001—Fundamentals of Management

IDSc 3030 (formerly MSci 3300)—Information Systems and Information Management

Mktg 3000—Principles of Marketing

OMS 3000—Introduction to Operations Management

Senior Policy Course—5 credits (A-F required)

Mgmt 3004

Economics—4 credit course selected from the following (A-F required)

Econ 3101; Econ 3102; Econ 3105; Econ 3701

International—4 credits selected from the following (A-F required)

AgEc 3070, 5720, 5750, 5790

BGS 3004

BGS 3019 (depending on the topic offered, this course may fulfill the requirement; consult the Undergraduate Studies Office for further information)

Econ 3041, 3315, 5041, 5301 or 5331, 5307 or 5337, 5313, 5315, 5401, 5431

FSMg 3460, 3490, 3620, 3680, 3820

Geog 3321, 3331, 3341, 3351, 3378, 5145, 5181, 5191

IntR 5145, 5831

PolS 3477, 3810, 5889

PA 5820

Communications—12 credits (A-F required)

Comp 3022—Critical Reading and Writing for Management (or Comp 1027 if taken fall 1989 or earlier)

Comp 3032—Pre-Professional Writing for Business

One course from the following (Note: Students are encouraged to complete any introductory speech or rhetoric prerequisites for the following courses; the prerequisite work, however, is not required for the CSOM degree program):

Rhet 3254—Advanced Public Speaking

Rhet 3266—Discussion Methods

Spch 1101—Fundamentals of Speech Communications: Oral Communication

Spch 3111—Leadership Communication

Spch 3411—Small Group Communication Processes

Spch 3605—Public Speaking (instructor approval required)

Spch 5422—Interviewing and Communication

Th 3803—Topics: Platform Performance

Additional Accounting Program

To earn a B.S.B. in accounting, 50% of all accounting courses must be taken from the Carlson School. This is generally equivalent to 5 courses.

Core—24 credits (A-F required)

Acct 3101—Intermediate Financial Reporting

Acct 5102—Advanced Financial Reporting I

Acct 3201—Intermediate Management Accounting

Acct 5125—Auditing Principles and Procedures

Acct 5135—Income Tax Accounting

BLaw 3058—Introduction to Law and the Law of Contracts and Sales Contracts

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Accounting Electives—8 credits of Accounting electives (A-F required; Acct 3199 and 3299 do not apply). Acct 5180 is recommended for students planning to take the CPA examination.

Additional Electives—Additional transferable electives (upper or lower division) from the Carlson School, College of Liberal Arts, Institute of Technology, or College of Agriculture to complete the 180 credits required for graduation. Consult an adviser in the Undergraduate Studies Office before taking courses in colleges other than those listed above.

Seek advice from accounting faculty on upper division electives. It is recommended, but not required, that you choose one of the following options:

1. Economics: Econ 3102 and one additional Economics course
2. Legal and Political Environment: BLaw 3078 and BLaw 3088
3. Information and Decision Sciences: IDSc 5102 and IDSc 5103

An accounting major may also earn a general management "area of emphasis" by completing at least 5 additional courses in the appropriate emphasis. See a Carlson School advisor for details.

Your attention is called to the Undergraduate Development Certificates in Accounting, page 487.

Information regarding names of instructors for Accounting classes is not available from either the Accounting Department or Extension Classes.

The Accounting Department strictly adheres to class size limits. CEE will only register students for accounting classes through the first week of classes if space is available. The instructor will not be allowed to admit students to classes under any circumstances. Do not contact the Accounting Department for permission to register for closed sections.

Students who are nearing the completion of their program and are admitted to the Accounting degree or certificate programs are encouraged to request early registration for upper division accounting courses, to assure space in the classes. See page 15 for early registration procedures.

Students will not be given permission to withdraw from an accounting class after the sixth week without extenuating circumstances and permission by the CEE Scholastic Committee.

First year accounting courses

The first-year accounting courses are designed to meet the needs of three groups of students: (a) those who plan to use accounting for management purposes; (b) those who intend to be practicing accountants, and will continue with the second-year and advanced accounting courses; (c) those who wish an introduction to the "language of business" as part of a liberal education. These are **not** bookkeeping courses.

Acct 1050 INTRODUCTION TO FINANCIAL REPORTING. 5 credits, tuition* (includes \$16 special fee): Resident \$366; Non-resident \$1031. (IS)

Introduction to basic concepts of measurement and valuation which underlie the development of financial reports for external users. Financial statement preparation, analysis of alternative valuation approaches, and interpretation of financial statement information are the focal points of the course. Lectures for each quarter meet concurrently. **NOTE: Do not fill in a section or room number on the registration form. Sections are filled sequentially. Students will be notified of section number and meeting room on their registration receipt. Must be taken A-F.** (Prereq 40 credits. Limited to 45)

Fall Qtr, ★Sec 1, Lect, MW, 6-7:15, BlegH 10; Rec, MW, 7:25-8:15, BlegH 10

Fall Qtr, ★Sec 2, Lect, MW, 6-7:15, BlegH 10; Rec, MW, 7:25-8:15, BlegH 115

Fall Qtr, ★Sec 3, Lect, MW, 6-7:15, BlegH 10; Rec, MW, 7:25-8:15, Law 3

Winter Qtr, ★Sec 4, Lect, MW, 6-7:15, BlegH 10; Rec, MW, 7:25-8:15, BlegH 135

Winter Qtr, ★Sec 5, Lect, MW, 6-7:15, BlegH 10; Rec, MW, 7:25-8:15, BlegH 225

Spring Qtr, ★Sec 6, Lect, MW, 6-7:15, BlegH 10; Rec, MW, 7:25-8:15, BlegH 260

Spring Qtr, ★Sec 7, Lect, MW, 6-7:15, BlegH 10; Rec, MW, 7:25-8:15, BlegH 135

Spring Qtr, ★Sec 8, Lect, MW, 6-7:15, BlegH 10; Rec, MW, 7:25-8:15, BlegH 115

Upper division accounting courses

NOTE—Students taking Carlson School of Management upper division undergraduate courses through CEE are expected to have completed the equivalent of 90 quarter college credits with a minimum of a "B-" grade average.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Acct 3001 INTRODUCTION TO MANAGEMENT ACCOUNTING. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

A broad overview of management accounting as the main information collection and analysis technology in an organization. Topics include analysis of cost-volume-profit relationships, budgeting, and analysis of variances from budgeted performance, and issues relating to decentralized organizational design. Lectures for each quarter meet concurrently. **NOTE: Do not fill in a section or room number on the registration form. Sections are filled sequentially. Students will be notified of section and meeting room on their registration receipt. Must be taken A-F.** (Prereq 1050 and at least 90 credits completed or in progress. Limited to 45)

Fall Qtr, ★Sec 1, Lect, MW, 6-7, AndH 330;
Rec, MW, 7:10-7:55, AndH 330

Fall Qtr, ★Sec 2, Lect, MW, 6-7, AndH 330;
Rec, MW, 7:10-7:55, RarigC 610

Winter Qtr, ★Sec 3, Lect, MW, 6-7, AndH 330;
Rec, MW, 7:10-7:55, AndH 330

Winter Qtr, ★Sec 4, Lect, MW, 6-7, AndH 330;
Rec, MW, 7:10-7:55, BlegH 115

Acct 3101 INTERMEDIATE FINANCIAL REPORTING. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Relationships between economic events and their representation in financial statements aimed at external users. Income determination, asset valuation, and capitalization of corporations are covered. **Must be taken A-F.** (Prereq A or B in1050 and at least 90 credits completed or in progress. Limited to 45)

Fall Qtr, ★Sec 1, TTh, 6-7:45, BlegH 150

Spring Qtr, ★Sec 2, MW, 6-7:45, BlegH 150

Acct 3201 INTERMEDIATE MANAGEMENT ACCOUNTING. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Examines multiproduct, multiperiod decision contexts emphasizing net present value including statistical and other data collection and analysis techniques, analysis of performance evaluation stemming from development in the theory of contracting; and richer development of coordination problems in decentralized organizations. **Must be taken A-F.** (Prereq 3001. At least 90 credits completed or in progress. **Prereq will be enforced.** Limited to 60)

Spring Qtr, ★Sec 1, TTh, 6-7:45, BlegH 150

Acct 5102 ADVANCED FINANCIAL REPORTING I. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-

resident Graduate School credit \$1384.

Development of an understanding of the relationship between complex events such as defined benefit pension plans, leases, and intercorporate investments and the reflection of these events in financial statements. **Must be taken A-F.** (Prereq 3101 or 5101. At least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota. Limited to 48)

Winter Qtr, ★Sec 1, TTh, 5:30-7:15, HHHctr 60

Acct 5125 AUDITING PRINCIPLES AND PROCEDURES. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384..

The auditor's role and function. Includes audit standards, ethics, procedures, and legal responsibilities. **Must be taken A-F.** The prerequisite will be enforced. (Prereq 3101 or 5101. At least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota. Limited to 53)

Fall Qtr, ★Sec 1, T, 5:30-9, BlegH 250

Acct 5126 INTERNAL AUDITING. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384..

Financial and operational auditing. Standards. Management of the function. **Must be taken A-F.** (Prereq 5102, 3201 or 5201 and at least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota. Limited to 45)

Fall Qtr, ★Sec 1, MW, 6-7:45, BlegH 210

Acct 5135 INCOME TAX ACCOUNTING. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384. (IS)

An introduction to principles of Federal income taxation of various taxpaying entities. **Must be taken A-F.** (Prereq 1050. At least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota. Limited to 50)

Fall Qtr, ★Sec 1, MW, 6-7:45, BlegH 230

Winter Qtr, ★Sec 2, TTh, 7:30-9:15, BlegH 145

Spring Qtr, ★Sec 3, W, 5:30-9, BlegH 230

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Acct 5160 FINANCIAL STATEMENT ANALYSIS. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384..

Interpretation and analysis of financial statements and schedules for investors and other users. **Must be taken A-F.** (Prereq 1050 or MBA 8030 and at least 90 cr completed or in progress. Students should contact the Department of Accounting to determine if graduate credit is available. Limited to 40)

Winter Qtr, ★ Sec 1, M, 5:30-9, HHHCtr 25

Acct 5180 ADVANCED FINANCIAL REPORTING II. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384..

Consolidated financial reporting with a particular focus on international business organizations. An introduction to reporting issues in governmental and not-for-profit entities is also presented. *Midquarter exams will be held outside of normally scheduled class hours; midquarter dates and times are Mon, Apr 25, from 7:45 to 9:30 p.m.; and Wed, May 18, 7:45 to 9:30 p.m. Must be taken A-F.* (Prereq 5102. At least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota. Limited to 52)

Spring Qtr, ★ Sec 1, MW, 6-7:45, BlegH 220

Acct 5230 CORPORATE TAXATION. 4 credits, \$684 plus special fee required.

The tax consequences of the formation, operation, and liquidation of a business corporation. (Prereq Δ and Acct 5135. Offered fall quarter. **For registration and special fee information, call 624-7511.** This course cannot be used to meet undergraduate degree requirements. Qualified students will be registered for graduate credit at the University of Minnesota. Limited to 60)

Acct 5236 TAXATION II. 4 credits, \$684 plus special fee required.

Corporate taxation, partnership taxation, tax research and the transfer tax. (Prereq Δ and Acct 5135 and at least 90 credits completed or in progress. Offered spring quarter. **For registration and special fee information, call 624-7511.** This course may be used to meet undergraduate degree requirements. Qualified students may register for graduate credit at the University of Minnesota. Limited enrollment)

Acct 5340 PARTNERSHIP TAXATION. 4 credits, \$684 plus special fee required.

The tax consequences of the formation, operation, and dissolution of a partnership. (Prereq Δ and Acct 5135. Offered spring quarter. **For registration and special fee information, call 624-7511.** This course cannot be used to meet undergraduate degree requirements. Qualified students will be registered for graduate credit at the University of Minnesota. Limited to 60)

Taxation studies—5230, 5236, and 5340 are part of a series of courses designed for students interested in post-baccalaureate studies in taxation. For information concerning registration, special course fees, and additional course offerings during 1993-94, call 624-7511.

Adult and Teacher Education (AdEd)

(125 Peik Hall: 625-6372)

College of Education

(Department of Curriculum and Instruction)

Textbooks for most Educ courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Eugene M. Anderson, Associate Professor
Harlan G. Copeland, Associate Professor
Rosemarie J. Park, Associate Professor
Nancy J. Rohde, Assistant Professor
Howard Y. Williams, Professor

Master's Degree—A Master of Education degree with a focus in *Teacher Leadership* is available through the departments of Curriculum and Instruction and Educational Policy and Administration. For more information, see page 482.

These courses are subject to frequent changes in time and rooms. Check for correct day, time, and room in a day school class schedule.

Enrollments in limited classes in this department are strictly enforced. Neither the department nor the course instructor will give written permission for registration in these classes once the limit is reached and the class closes. Check for openings in day school registrations.

Study Abroad—Teachers of Spanish will find a 5-week summer study abroad program designed especially for them offered by the Global Campus. For more information, call (612) 625-3379.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

AdEd 5103 (formerly Educ 5103) ADULT EDUCATION WORKSHOP. 1-12 cr (maximum 12 cr), 3 credits each offering, §Educ 5102, tuition each offering*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Study of topic appropriate to the activities and interests of the participant. **Must be taken A-F.** *Focus Sec 1: The Library as an Adult Education Agency. Focus Sec 2: History and Philosophy of Adult Education. Focus Sec 3: Distance Education: From Correspondence to Electronic Delivery. Focus Sec 4: The Media in Adult Education.* (Prereq practicing adult educator or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★● Sec 1, T, 3:35-6, VoTech R275,

StP Campus, Rohde

Winter Qtr, ★● Sec 2, T, 4:40-7, VoTech R275,

StP Campus, Williams

Winter Qtr, ★● Sec 3, T, 4:40-7, VoTech R275,

StP Campus, Rohde

Spring Qtr, ★● Sec 4, T, 4:40-7, VoTech R275,

StP Campus, Rohde

AdEd 5104 (formerly Educ 5104) SURVEY OF ADULT EDUCATION. 3 credits, §Educ 5104, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

General concepts in the field; literature, objectives, history, philosophy, research, institutions, issues and problems. **Must be taken A-F.** Prereq senior standing. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★● Sec 1, M, 3:35-6, VoTech R275,

StP Campus, Copeland

Spring Qtr, ★● Sec 2, W, 3:35-6, VoTech R275,

StP Campus, Copeland

AdEd 5201 (formerly Educ 5201) INTRODUCTION TO THE UNDEREDUCATED ADULT. 3 credits, §Educ 5201, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Issues in literacy education, characteristics, problems, individual differences of the adult undereducated learner; traditional and innovative approaches for working with adults in literacy programs. **Must be taken A-F.** (No prereq. Qualified students may regis-

ter for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★● Sec 1, T, 3:35-6, VoTech 220, StP Campus, Park

AdEd 5202 (formerly Educ 5202) ADULT LITERACY: DIAGNOSIS AND PRESCRIPTION. 3 credits, §Educ 5202, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Application of diagnostic information, instruments, and techniques to learning difficulties of adults in reading and mathematics programs. **Must be taken A-F.** (Prereq 5201 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★● Sec 1, M, 3:35-6, VoTech R220, StP Campus, Park

AdEd 5203 (formerly Educ 5203) ADULT LITERACY: METHODS AND MATERIALS. 3 credits, §Educ 5203, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Teaching literacy skills to adults: basic theories, approaches, overview of methods and materials for implementation. **Must be taken A-F.** (Prereq 5202 or Elem 5331 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★● Sec 1, M, 3:35-6, VoTech R285, StP Campus, Park

AdEd 5204 (formerly Educ 5204) READING IN WORK SETTINGS. 3 credits, §VoEd 5204, Educ 5204, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Overview of concepts involved in integrating reading instruction into vocational training programs and work settings; diagnosis and methods of assessing needs of vocational students and workers on a job; techniques for building needs into training programs. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★● Sec 1, W, 3:35-6, VoTech R250, StP Campus, Park

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

AdEd 5301 (formerly Educ 5301) DESIGNING THE ADULT EDUCATION PROGRAM. 3 credits, §Educ 5301, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Designing and implementing educational programs for adults; concepts, theories, determining needs, educational objectives, learning experiences, and evaluating outcomes. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★● Sec 1, Th, 3:35-6, VoTech R285, StP Campus, Copeland

AdEd 5401 (formerly Educ 5401) ADULT LEARNING AND DEVELOPMENT THROUGH THE LIFE SPAN. 3 credits, §Educ 5401, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Physiological, social, and cultural bases of adult behavior; motivation, socialization, personality change as applied to education of adults. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★● Sec 1, Th, 3:35-6, ClaOff B30, StP Campus, Williams

Spring Qtr, ★● Sec 2, Th, 3:35-6, VoTech R280, StP Campus, Williams

AdEd 5411 (formerly Educ 5411) STRATEGIES FOR TEACHING ADULTS. 3 credits, §Educ 5411, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Identification, classification, and analysis of techniques used in teaching adults. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★● Sec 1, T, 4:40-7, VoTech R250, StP Campus, Williams

Spring Qtr, ★● Sec 2, M, 3:35-6, VoTech 220, StP Campus, Copeland

AdEd 5440 (formerly Educ 5440) MULTI-DISCIPLINARY PERSPECTIVES ON AGING. 4 credits, §Educ 5440, §CPsy 5305, §HSU 5009, §PA5414, §Phar 5009, §PubH 5737, §SAHP 5009, §Soc 5960, §SW 5024, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for Soc 5960. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with CPsy 5305, Soc 5960, HSU 5009, Phar 5009, PA 5414, PubH 5737, SW 5024. A joint Day/Extension class)

Fall Qtr, ★● Sec 1, MW, 4:40-6:25, MoosT 2-690, Copeland (Limited to a combined total of 37 Extension students)

Spring Qtr, ● Sec 2, MW, 4:40-6:25, MoosT 2-690, Copeland

AdEd 5501 (formerly Educ 5501) CONTINUING EDUCATION AND THE PROFESSIONS. 3 credits, §Educ 5501, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Review of literature; analysis of philosophies, issues, and trends; emphasis on integrating personal growth, professional needs, and statutory requirements in continuing education programs. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★● Sec 1, T, 3:35-6, VoTech R270, StP Campus, Copeland

Day School Classes—In addition to the Extension Classes listed above, day school classes are sometimes offered to educators during late afternoon, early evening, and weekend hours. For registration information about day school College of Education courses, see page 148 or call 625-6501.

Aerospace Engineering and Mechanics (AEM)

(107Akerman Hall: 625-8000)

Institute of Technology

Textbooks for most AEM courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Stewart E. Almleaf, Pilot, Ground School

Director

Nejat Cur, Lecturer in Aerospace Engineering and Mechanics

William L. Garrard, Professor of Aerospace Engineering and Mechanics

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Aerospace Engineering and Mechanics. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Ground school course for private pilots—general information:

The University Pilot Ground School course is designed to provide the ground instruction required by the Federal Aviation Administration prior to taking the Private Pilot written test. It will also be of benefit to the student pilot during in-flight instruction and will assist in preparation for the private pilot certificate.

The Ground School meets all requirements of, and is certified by, the F.A.A. as an Approved Basic and Advanced Ground School, and offers to its students all of the privileges extended by the F.A.A. to such approved schools.

It is to the flight student's advantage to complete the Ground School studies and F.A.A. written examinations as early as possible in his or her flight-training program, as there is a two-year limit, following the completion of an F.A.A. written examination, within which the related flight instruction and flight test must be completed.

AEM 3009 GROUND SCHOOL FOR PRIVATE PILOTS. 5 credits, tuition*: Resident \$412.50; Non-resident \$1196.25.

Covers theory of flight, aircraft performance, aircraft systems and engine operation, flight instruments, and meteorology. In addition, the course deals with Federal Aviation Regulations, cross country navigation, and radio navigation aids. Lectures are beneficial for pilot training and the safe, efficient operation of aircraft.

Open to all pilots and prospective pilots, regardless of their educational or flight-experience background. Designed primarily to prepare the student pilot for the Federal Aviation Administration's Private Pilot written test and the oral questioning used during the Private Pilot practical test. The course is also open to students who have no interest in a private pilot's certificate but do have an interest in aviation. (No prereq. Limited to 50)

Winter Qtr, ★Sec 1, TTh, 7-9:40, AkerH 209, Almleaf

AEM 1015 STATICS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Force and moment vectors; resultants. Principles of statics. Application to simple trusses, frames and machines. Distributed loads. Hydrostatics. Properties of Areas. Laws of friction. (Prereq Phys 1251 or equivalent, Math 1261. Limited to 75)

Fall Qtr, ★Sec 1, W, 6:10-9:30, AkerH 225

Winter Qtr, ★Sec 2, T, 6:10-9:30, AmundH B75

AEM 3016 DEFORMABLE BODY MECHANICS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Uniaxial loading and deformation. Stress and strain at a point. Forces and moments in beams. Centroids and second moments. Material behavior; linear elasticity. Torsion. Bending of beams of symmetrical section. (Prereq 1015, ¶Math 3261 or equivalent. Limited to 75)

Fall Qtr, ★Sec 1, T—6:10-9:30, AkerH 225

Spring Qtr, ★Sec 2, W—6:10-9:30, AkerH 209

AEM 3036 DYNAMICS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Review of particle dynamics. Mechanical systems and the rigid-body model. Kinematics and dynamics of plane systems. (Prereq 1015, ¶Math 3261 or equivalent. Limited to 75)

Winter Qtr, ★Sec 1, T—6:10-9:30, AkerH 309

Spring Qtr, ★Sec 2, M—6:10-9:30, AkerH 209

AEM 3200 INTRODUCTION TO ENGINEERING FLUID MECHANICS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

The flow of viscous incompressible fluids; fluid statics, Bernoulli flow, momentum conservation, laminar and turbulent pipe flow, laminar and turbulent boundary layers. (Prereq 1015, Math 3261, Phys 1251 or equivalent. Limited to 50)

Fall Qtr, ★Sec 1, T, 6:10-9:30, AkerH 309

Winter Qtr, ★Sec 2, T, 6:10-9:30, AkerH 225

Spring Qtr, ★Sec 3, T, 6:10-9:30, AkerH 225

AEM 5200 KINEMATICS AND DYNAMICS OF FLUID FLOW. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

First course in fluid mechanics. Includes stress and strain rate descriptions, fluid statics, use of differential and finite control volume analysis with continuity, momentum and energy equations, Bernoulli and Euler equations, introduction to Navier-Stokes equations, vorticity, potential flow. (Prereq upper division IT student or grad, 3036, ¶Math 3252. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, T, 6:10-9:30, AkerH 313

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Afro-American and African Studies (Afro)

(808 Social Science Tower: 624-9847)
College of Liberal Arts

Textbooks for most Afro and Arab courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also History and Women's Studies)

Teirab AshShareef, Assistant Professor
 Rose Brewer, Associate Professor
 Victoria Coifman, Assistant Professor
 Charles A. Pike, Assistant Professor
 John M. Taborn, Associate Professor
 Nassif Youssif, Assistant Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Afro-American and African Studies and in Arabic. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Afro 1021 INTRODUCTION TO AFRICA. 4 credits, tuition*: Resident \$280; Non-resident \$812. Diverse elements of African studies curriculum, content, and methodology. Historical perspective and present trends. (No prereq. Limited to 45).
 Spring Qtr, ★Sec 1, Th, 6:20-8:50, BlegH 135, Coifman

Afro 3025 BLACK AMERICANS: SOCIALIZATION, PERSONALITY, AND BEHAVIOR. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Development of the black psyche and of the black person and black culture. (No prereq. Limited to 35)
 Fall Qtr, ★Sec 1, T, 6:20-8:50, BlegH 135, Taborn

Afro 3072 RACISM: SOCIAL-PSYCHOLOGICAL CONSEQUENCES FOR BLACK AMERICANS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Racism and its effects on black Americans; definitions, determinants, and dynamics. Examined in an experiential context to reflect individual and institutional racism in milieu of student interest. (No prereq. Meets concurrently with Afro 5072. Limited to a combined total of 60)

Winter Qtr, ★Sec 1, T, 6:20-8:50, BlegH 250, Taborn

Spring Qtr, ★Sec 2, T, 6:20-8:50, BlegH 250, Taborn

Afro 3431 HISTORY OF AFRICA TO 1800. 4 credits, §Hist1431, §Hist3431, tuition*: Resident \$294; Non-resident \$852.60.

Socioeconomic, political, and cultural development in pre-colonial Africa; emphasis on the slave trade, Islamic revolution, and European commercial penetration. (No prereq. Meets concurrently with Hist 3431)

Fall Qtr, Sec 1, Th, 6:20-8:50, RarigC 616

Afro 3432 HISTORY OF AFRICA: 1800 TO PRESENT. 4 credits, §Hist 1432, §Hist 3432, tuition*: Resident \$294; Non-resident \$852.60.

Colonial rule, the forced restructuring and underdevelopment of African economies, African resistance, nationalism, and the problems of independence. (No prereq. Meets concurrently with Hist 3432)

Winter Qtr, Sec 1, T, 6:20-8:50, AndH 230

Afro 3601 INTRODUCTION TO AFRICAN LITERATURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Oral and written African literature of the 19th and 20th centuries. All readings in English. (No prereq. Limited to 25)

Fall Qtr, ★Sec 1 T, 6:15-8:50, HHCtr 60, Pike
 Spring Qtr, ★Sec 2 T, 6:15-8:50, BlegH 255, Pike

Afro 5072 RACISM: SOCIAL-PSYCHOLOGICAL CONSEQUENCES FOR BLACK AMERICANS. 4 credits, §3072, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for Afro 3072. (No prereq. Meets concurrently with Afro 3072. Qualified students may register for graduate credit at the University of Minnesota. Limited to a combined total of 60)

Winter Qtr, ★Sec 1 T, 6:20-8:50, BlegH 250, Taborn

Spring Qtr, ★Sec 2 T, 6:20-8:50, BlegH 250, Taborn

Afro 5301 AFRICAN LITERATURE: THE NOVEL. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Novels of continental Africa in English, French, and African languages. Non-English materials in translation. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Winter Qtr, ★Sec 1, T, 6:15-8:50, BlegH 350, Pike

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Internships and Study in Africa—Internships and directed study are arranged in Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

Arabic (Arab)

Arab 3011 AFRICAN ISLAM. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Ideological, doctrinal, and ritual aspects of continental African Islam. Various religious brotherhoods and Sufi orders from different African countries in the 20th century: the Ansar, the Khatmiyya, the Muslim Brothers, the Qadriyya, the Republican Brothers, the Sanusiyya, the Tijaniyya, and others. No knowledge of Arabic required. All readings in English. (No prereq)

Fall Qtr, Sec 1, M, 4:15-7, BlegH 245,
AshShareef

Arab 3213 THE QUR'AN AS LITERATURE. 4 credits, \$MidE 3213, RelS 3213, tuition*: Resident \$294; Non-resident \$852.60.

Texts and commentaries in translation. Knowledge of Arabic not required. (No prereq. Meets concurrently with MELC 3213, RelS 3213. Limited to 10)

Spring Qtr, ★Sec 1, M, 4:15-7, BlegH 330,
AshShareef

Aging studies

(See graduate program in gerontology, page 482; and REX 0301, Nutrition and Oral Health of the Elderly)

Agriculture, College of

See course listings for:

- Agricultural and Applied Economics
- Agricultural Education
- Agronomy and Plant Genetics
- Animal Science
- Entomology
- Food Science and Nutrition
- Horticultural Science
- Plant Pathology
- Soil Science
- Rhetoric

College of Agriculture Professional Experience Program—Students enrolled in the College of Agriculture may participate in the Professional Experience Program (PEP), which provides opportunity to engage in paid work experiences for 12 or more weeks during fall, winter, spring, or summer. Students of junior standing (90 credits) are eligible for the program which awards 4 credits to those students who satisfactorily complete the program. Tuition is approximately \$322. Students

register through any one of the 10 departments of the College of Agriculture. Additional information about PEP is available from the College of Agriculture Career Services office, 272 Coffey Hall on the St. Paul campus (624-2710), or from departmental offices and undergraduate advisers of the college.

Agricultural and Applied Economics (AgEc)

(231 Classroom Office Building: 625-1222)

College of Agriculture

Textbooks for most AgEc courses are available at Books Underground on the St. Paul campus (624-9200).

Elaine H. Asp, Associate Professor of Consumer Food Science

Reynold P. Dahl, Professor

Beth W. Honadle, Professor

Jean Kinsey, Professor

Scott Loveridge, Assistant Professor

Wilbur R. Maki, Professor

Willis Peterson, Professor

Ben Senauer, Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Agricultural and Applied Economics. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

International Internships and Study Abroad—Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

AgEc 5480 FUTURES MARKETS AND PRICES. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Economics of futures trading; the basis and theoretical price relationships in storable and nonstorable commodities; hedging and commercial use of futures markets with illustrations; arbitrage; options on agricultural futures, financial futures; speculation; futures market performance and regulation. (Prereq 1101 and 1102 or Econ 1101 and 1102. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Winter Qtr, ★Sec 1, TTh, 6:10-7:50, HckrH 210,
StP Campus, R Dahl

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

AgEc 5550 FOOD MARKETING ECONOMICS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Economics of food marketing in U.S. Covers food consumption trends; consumer food behavior; food expenditure and consumption data; consumer survey methodology; the food distribution and retailing system; food policy issues related to food marketing. Students pursue individual and group projects. (Prereq 3101 or 3001 or #. Meets concurrently with FScN 5474. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, TTh, 4:30-6:10, McNH 144, StP Campus, Asp, Senauer

AgEc 5580 HUMAN CAPITAL AND HOUSEHOLD ECONOMICS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Investment in household formation, children, education, health, labor force participation, and non-market work analyzed in context of household economics and national productivity. Effects of economic variables on investment decisions and returns. (Prereq 3001 or Econ 3101 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, MW, 4:30-5:45, ClaOff B36, StP Campus, Kinsey

AgEc 5620 REGIONAL ECONOMIC ANALYSIS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Analysis of regional industry and community structure; role of resource, transportation, and institutional constraints; trade, migration and investment in regional growth and change; use of regional economic formation in business investment and location planning. (Prereq 1101 or Econ 1101. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, TTh, 4:30-5:45, ClaOff B42, StP Campus, Loveridge

AgEc 5630 REGIONAL DEVELOPMENT SYSTEMS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Population, income, and employment disparities in regional growth and development in selected countries; regional development strategies and institutions for public intervention in regional development process; regional systems and analyses forecasts for economic policy and development planning. (Prereq 1101 or Econ 1101. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, MW, 4:30-5:45, ClaOff B35, StP Campus, Maki

AgEc 5640 FINANCING STATE AND LOCAL GOVERNMENTS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Offered via interactive television between two sites, with students at both locations. Problems and issues in financing state and local public services in the United States; state and local revenue systems, debt and expenditures; intergovernmental fiscal relations; budget analysis. (Prereq 3001 or Econ 3101 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ●Sec 1, Th, 4:30-7:50, ClaOff B36, StP Campus, Honadle

AgEc 5790 WORLD FOOD PROBLEMS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

A multidisciplinary approach to the social, economic, and technical problems of feeding the world's growing population. Principles sought from the social and economic sciences, plant sciences, and animal sciences for the application to food problems. (No prereq. Meets concurrently with Agro 5200, CAPS 5280, and FScN 5643. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension Class)

Fall Qtr, ●Sec 1, W, 6-9, ClaOff B35, StP Campus, Peterson

AgEc 5990 SPECIAL TOPICS IN AGRICULTURAL AND APPLIED ECONOMICS. 2 credits, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Meets concurrently with a multidisciplinary course, ID 5615-5616-5617 (Ways of Knowing: Six Disciplines Examined), page 245. Faculty from six different disciplines meet together with students weekly for a full academic year to discover how various aca-

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

demic disciplines ask questions, gather information, and validate theories. Disciplines examined include African-American studies, agriculture and applied economics, art history, economics, and genetics. Students must enroll in each quarter for four credits of the ID 5615-5616-5617 or four credits of corresponding special topics/directed studies courses; students must enroll all three quarters to receive credit. Limited to a combined total of 22 students. *For information about registration and graduate credit, call (612)625-3898.*

Agricultural Education (AgEd)

(320 Vocational/Technical Building: 624-2221)

College of Education

(Vocational and Technical Education)

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Agricultural Education. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Agricultural Engineering (AgEn)

(213 Agricultural Engineering: 625-7733)

Institute of Technology

Textbooks for most AgEn courses are available at Books Underground on the St. Paul campus (624-9200).

Kevin A. Janni, Associate Professor

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in AgEn. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

AgEn 5745 VENTILATING SYSTEMS FOR INDOOR AIR QUALITY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Impact of indoor air quality on humans, animals, and plants. Contaminant sources. Ventilating processes, systems, control strategies, and equipment for indoor air quality control. Case studies from residential, commercial, and agricultural systems. (Prereq ME 3301, CE 3400 or AEM 3200, or grad student. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class) Fall Qtr, ●Sec 1, MW, 4:30-6:30, AmundH 124, Janni

Agricultural Engineering Technology (AgET)

(213 Agricultural Engineering: 625-7733)

College of Agriculture

Textbooks for most AgET courses are available at Books Underground on the St. Paul campus (624-9200).

Philip R. Goodrich, Associate Professor

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in AgET. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

AgET 5027 APPROPRIATE TECHNOLOGY FOR INTERNATIONAL DEVELOPMENT. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Definition, history, successes, and failures of appropriate technology. Social and technical appropriateness. Water supply, treatment, storage, conveyance. Water pumps, sanitation. Power; petal, wind, water, solar, methane. Agricultural machinery and animal power. Transfer and adoption of technology. Lecture and laboratory. (Prereq Math 1111, Chem 1011 or 1004, Phys 1041. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★●Sec 1, MW, 5:30-8, AgEng 307, STP Campus, Goodrich

Agronomy and Plant Genetics (Agro)

(411 Borlaug Hall: 625-7773)

College of Agriculture

Textbooks for most Agro courses are available at Books Underground on the St. Paul campus (624-9200).

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Agronomy and Plant Genetics. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Agro 5000 PROFESSIONAL EXPERIENCE PROGRAM. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Supervised practical professional experience in agromonic industries and farm enterprise systems, together with studies of various aspects of the industry and related fields. **Must be taken S-N.** (Prereq #. May not be taken for graduate credit)

Fall Qtr, Sec 1, Arr

Winter Qtr, Sec 2, Arr

Spring Qtr, Sec 3, Arr

Agro 5200 WORLD FOOD PROBLEMS. 3 credits, §AgEc 5790, §FScN 5643, §Soc 5675, §LACS 5280, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

A multidisciplinary approach to the social, economic, and technical problems of feeding the world's growing population. Principles sought from the social and economic sciences and plant, animal, and food sciences for their application to world food problems. (Prereq sr or grad student with #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with AgEc 5790 and FScN 5643. A joint Day/Extension class)

Fall Qtr, ★Sec 1, W, 6-9, ClaOff B35, StP Campus

Alcohol and Drug Counseling Education

(See Family Social Science)

American Indian Studies (AmIn)

(102 Scott Hall: 624-1338)

College of Liberal Arts

Textbooks for most AmIn courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also CSch 0216, In Search of Little Crow: The 1862 Minnesota-Dakota Conflict; and REX 0243, Native American Myth Busting in American History)

Carolyn Bordeaux, Lecturer

Robert Danforth, Assistant Education Specialist

Henry Goodsky, Assistant Education Specialist

Ron Libertus, Lecturer

Carol Miller, Associate Professor of American Studies

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in American Indian Studies. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

AmIn 1771 INTRODUCTION TO AMERICAN INDIAN STUDIES. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Content, methods, and objectives of American Indian studies. Images of the American Indian, persistence and change in American Indian communities, linguistics and literature, and tribal ethnohistories. (No prereq. A joint Day/Extension class limited to 100 Extension students)

Winter Qtr, ★Sec 1, TTh, 4:15-5:30, NichH 211, Danforth

Spring Qtr, ★Sec 2, T, 4:15-7, NichH 211, Danforth

AmIn 3026 OJIBWE HISTORY AND CULTURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

The processes of maintenance and change in Ojibwe culture. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, Th, 6:20-8:50, ScottH 4, Goodsky

(See also GC 1812, American Indian Literature)

AmIn 3116 AMERICAN INDIAN LITERATURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Comparative studies of oral traditions and modern tribal literature. (No prereq. Limited to 35)

Fall Qtr, ★Sec 1, W, 6:20-8:50, ScottH 4, Miller

Spring Qtr, ★Sec 2, W, 6:20-8:50, Mdewakanton Sioux Comm Ctr, 2330 Sioux Trail NW, Prior Lake, Miller

AmIn 3121 HISTORY OF AMERICAN INDIAN EDUCATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

American Indian education in the United States; emphasis on educational systems established by the Indian peoples. (Prereq 3111, 3112 or #. Limited to 40)

Fall Qtr, ★Sec 1, T, 6:20-8:50, NichH 109

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

AmIn 3960 TOPICS IN AMERICAN INDIAN STUDIES: AMERICAN INDIAN MUSIC IN THE 20TH CENTURY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Introduces students to the diversity of North American Indian musical traditions. Concentrates on music tradition within the western Great Lakes region, including songs of the Anishinabe (Ojibwe), Winnebago, and intertribal groups. Focuses on pow wows as well as precedents within the "Big Drum" religion. Emphasizes reading, writing, and listening to American Indian music, and learning social and intertribal songs. (No prereq. Limited to 35)

Winter Qtr, ★Sec 1, W, 6:20-8:50, NichH 109, Danforth

AmIn 3960 TOPICS IN AMERICAN INDIAN STUDIES: TOURISM, LEISURE, AND THE AMERICAN INDIAN. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Examines how American Indians are portrayed, are understood, and how they participate within selected social contexts of touristic and leisure experience. Topics include interpretation of tourism and leisure, prominent non-Indian images of American Indians, and a variety of social contexts of touristic and leisure experience. (No prereq. A joint Day/Extension class limited to 40 Extension students)

Spring Qtr, ★Sec 2, W, 4:15-7, ScottH 4, Danforth

AmIn 3960 AMERICAN INDIAN WOMEN'S LITERATURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Examines connections among traditional cultural expressions of American Indian people and the artistic identities and voices of American Indian women writers. (No prereq. Limited to 35)

Spring Qtr, ★Sec 3, Th, 6:20-8:50, ScottH 4, Bordeaux

AmIn 5990 DIRECTED RESEARCH: A TRIP TO THE SOUTHWEST. 1-15 credits, tuition* each credit: Resident \$73.50; Non-resident \$213.50. Independent research under faculty guidance (No prereq. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★Sec 1, Arr, Libertus

American Sign Language

See Educational Psychology

American Studies (AmSt)

(104 Scott Hall: 624-4190)

College of Liberal Arts

Textbooks for most AmSt courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

All American Studies courses are open to nonmajors. (See also History; and The Compleat Scholar non-credit courses)

William H. Agee, Lecturer

John Fiske, Visiting Professor

A major in American Studies can be completed in the evening.

Most courses required for the major are offered at least every two years. Certain courses, however, may be offered less frequently. It may be necessary occasionally for students seeking a B.A. in American Studies to take some classes during the day in order to graduate. Interested students should discuss plans with a teacher of American Studies courses or with a CEE counselor (625-2500).

B.A. Major Sequence

Required Preparatory Courses 12 credits from 1001, 1002, 1003, 3111, 3112, 3113. Recommended but not required are Hist 1301, 1302 (Survey of American History)

Major Requirements—68 credits, distributed as follows:

Area Requirements: American Studies students choose (with adviser approval) a total of 44 credits of 3000 or 5000 level courses related to American culture. These must include 8 to 12 credits in each of the following four areas: American history; American literature; social sciences in the United States; American art history, music, or philosophy. A list of the many courses which meet these requirements may be obtained in the American Studies office, 104 Scott Hall.

Junior Proseminar: AmSt 3299 (4 credits)

Senior Proseminar: AmSt 3301-3302-3303 (12 credits total)

12 credits in foreign civilization (must be 3000 or 5000 level courses) chosen in consultation with major adviser.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in American Studies. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

You need not be majoring in American Studies to register for these classes.

Continuing Education for Women (CEW) section available in the following course: AmSt 1001

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

AmSt 1001 AMERICAN CULTURE I: ORIGINS THROUGH MID-19TH CENTURY. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Interdisciplinary study of selected class, gender, public policy, and social issues by comparing the cultures and artistic expression of at least three of the following groups: European American, African American, American Indian, Chicano/Latino, and Asian American. Meets CLA Cultural Pluralism requirement. (No prereq)

Fall Qtr, ★Sec 1, T, 6:20-8:50, ScottH 4, Agee (Limit 35)

Fall Qtr, Sec 2, F, 9:30 a.m.-12, MacP. *Offered through Continuing Education for Women*

AmSt 1002 AMERICAN CULTURE II: MID-19TH CENTURY TO 1920S. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Interdisciplinary study of selected class, gender, public policy, and social issues by comparing the cultures and artistic expression of at least three of the following groups: European American, African American, American Indian, Chicano/Latino, and Asian American. Meets CLA Cultural Pluralism requirement. (No prereq. Limited to 35)

Winter Qtr, ★Sec 1, T, 6:20-8:50, ScottH 4, Agee

AmSt 1003 AMERICAN CULTURE III: 1920S TO THE PRESENT. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Interdisciplinary study of selected class, gender, public policy, and social issues by comparing the cultures and artistic expression of at least three of the following groups: European American, African American, American Indian, Chicano/Latino, and Asian American. Meets CLA Cultural Pluralism requirement. (No prereq. Limited to 35)

Spring Qtr, ★Sec 1, T, 6:20-8:50, ScottH 4, Agee

AmSt 3111 CREATIVE AMERICANS AND THEIR WORLDS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

A study of the ways in which the works of selected American writers, painters, architects, filmmakers, and other artists can illuminate tensions and conflicts which have arisen out of a dual commitment by Americans to values located in nature and the natural landscape, on the one hand, and, on the other, to values associated with technological progress and ever-higher levels of affluence. "The myth of the garden" in literature and painting. Significance of paintings of urban-technological landscapes. The development of the skyscraper and of the "Chicago School" of modern architecture. The work and ideas of Frank Lloyd Wright. Contemporary issues relating to technology and the environment considered from the perspectives provided by the artists and writers we have

studied. Readings of varying lengths from Crèvecoeur, Emerson, Thoreau, Mark Twain, Frank Norris, and Tom Wolfe. (No prereq. Limited to 35)

Fall Qtr, ★Sec 1, M, 6:20-8:50, ScottH 4, Agee

AmSt 3112 AMERICAN EVERYDAY LIFE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

A study of the ways in which the works of selected American writers, painters, architects, filmmakers, and creators of the popular arts can illuminate the changing roles which men and women have played in their everyday lives, especially in relation to the historical evolution of work and the family. The religious roots of traditional work and family roles for men and women. The development of the male ethos and the success ideal. The female ethos and the ideal of domesticity. The movement away from traditional roles, ideals, and ethical norms in modern everyday life. The sexual revolution. Women and the success ideal. Emergent patterns of family life. Readings of varying length from Franklin, Norris, Lewis, Wolfe, and others. (No prereq. Limited to 35)

Winter Qtr, ★Sec 1, M, 6:20-8:50, ScottH 4, Agee

AmSt 3113 AMERICAN CULTURAL DIVERSITY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

A study of some ways in which the works of selected writers, painters, architects, filmmakers, and creators of the popular arts can illuminate forces for diversity and unity in modern America. The focus is on the cultural expression, values, and lifestyles of members of minority and majority cultures, with an emphasis on members of black and white cultures of the American South during the last century. Meets CLA Cultural Pluralism requirement. (No prereq. Limited to 35)

Spring Qtr, ★Sec 1, M, 6:20-8:50, ScottH 4, Agee

AmSt 3301 PROSEMINAR: AMERICAN STUDIES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Each quarter covers a problem related to a representative theme, figure, or period. Students research and write senior theses. Required of majors, but open to nonmajors. (No prereq)

Fall Qtr, Sec 1, W, 6:20-8:50, ScottH 2

AmSt 3302 PROSEMINAR: AMERICAN STUDIES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Each quarter covers a problem related to a representative theme, figure, or period. Students research and write senior theses. Required of majors, but open to nonmajors. (No prereq)

Winter Qtr, Sec 1, W, 6:20-8:50, ScottH 2

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

AmSt 3303 PROSEMINAR: AMERICAN STUDIES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Each quarter covers a problem related to a representative theme, figure, or period. Students research and write senior theses. Required of majors, but open to nonmajors. (No prereq)

Spring Qtr, Sec 1, W, 6:20-8:50, ScottH 2

AmSt 5920 TOPICS: THE MEDIA AND POPULAR CULTURE IN THE UNITED STATES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

A course that is both theoretical and analytical. The theoretical perspectives will be those of material cultural studies and aspects of poststructuralism and postmodernism. The cultural studies component will treat popular culture as sites for the struggle for meaning where the social struggle is engaged culturally: in poststructuralism it will explore developments around the concepts of power, knowledge, and the body; and in postmodernism its focus will be on simulation and the deferral of meaning. These theories all have useful methods of analysis which will be applied to examples of the contemporary media and popular culture. These will include Elvis and his fans, the Clarence Thomas-Anita Hill hearings, Rodney King and L.A., the Murphy Brown-Dan Quayle debate, Rush Limbaugh, and Black Liberation radio. This material will cover both quarters. *Only those who complete Sec 1 may enroll in Sec 2. Must be taken A-F or V.* (Prereq Sec 1 for Sec 2. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Fall Qtr, ★Sec 1, M, 6:20-8:50, ScottH 2, Fiske

Winter Qtr, ★Sec 2, M, 6:20-8:50, ScottH 2, Fiske

Ancient Near Eastern Studies (ANE); Hebrew (Hebr); Jewish Studies (JwSt)

(331 Folwell Hall: 625-5353)

College of Liberal Arts

(Department of Classical and Near Eastern Studies)

Textbooks for most courses in this department are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Classical and Near Eastern Studies; Religious Studies; and The Complete Scholar noncredit courses)

Stephen Feinstein, Visiting Professor

Jonathan Paradise, Associate Professor

Daniel Reisman, Associate Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Ancient Near Eastern and Jewish Studies, Akkadian, Hebrew, and Jewish Studies. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

No Extension Classes courses in Hebrew offered 1993-94

ANE 1001 THE BIBLE: NARRATIVE TEXTS. 4 credits, \$3001, \$ReIS 3201, tuition*: Resident \$280; Non-resident \$812.

Survey of literary and historical narrative texts from: Pentateuch, Joshua, Judges, Samuel, and Kings. Reading of extensive selections from Bible and secondary materials discussing literary background of the texts. (No prereq. Meets concurrently with 3001, ReIS 3201)

Fall Qtr, Sec 1, T, 6:20-8:50, NichH 216, Reisman

JwSt 1034 INTRODUCTION TO JUDAISM. 4 credits, \$3034, \$ReIS 1034, 3034, tuition*: Resident \$280; Non-resident \$812.

Concepts, movements, and institutions in the development of classical Judaism, as manifested in the literature and festivals of the Jewish people from Second Commonwealth times to the present. (No prereq. Meets concurrently with 3034, ReIS 1034, 3034)

Winter Qtr, Sec 1, W, 6:20-8:50, FolH 218

ANE 3001 THE BIBLE: NARRATIVE TEXTS. 4 credits, \$1001, \$ReIS 3201, tuition*: Resident \$294; Non-resident \$852.60.

See course description for ANE 1001. (No prereq. Meets concurrently with 1001, ReIS 3201)

Fall Qtr, Sec 1, T, 6:20-8:50, NichH 216, Reisman

JwSt 3034 INTRODUCTION TO JUDAISM. 4 credits, \$1034, \$ReIS 1034, 3034, tuition*: Resident \$294; Non-resident \$852.60. (IS)

See course description for ANE 1034. (No prereq. Meets concurrently with 1034, ReIS 1034, 3034)

Winter Qtr, Sec 1, W, 6:20-8:50, FolH 218

JwSt 3115 MISHNAH AND MIDRASH IN TRANSLATION. 4 credits, \$ReIS 3115, tuition*: Resident \$294; Non-resident \$852.60.

Rabbinic writings in their original contexts and as living texts for the present. Interpretations of the Bible by early rabbis that address moral, theological, and literary problems. Jewish laws as a mirror of human culture. Knowledge of Hebrew not required. (No prereq. Meets concurrently with ReIS 3115)

Spring Qtr, Sec 1, Th, 6:20-8:50, FolH 208

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

ANE 3251 MODERN STUDY OF THE OLD TESTAMENT. 4 credits, §ReIS 3251, tuition*: Resident \$294; Non-resident \$852.60.

Methods employed in the study of the Old Testament, including textual criticism, the anthropological approach, the sociological approach, the history of religion, and the uses of archaeology in interpreting the text. (No prereq. Meets concurrently with ReIS 3251) Spring Qtr, Sec 1, W, 6:20-8:50, FolH 50, Reisman

JwSt 3521 THE HOLOCAUST. 4 credits, §ReIS 3541, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Nazi destruction of Jewish life in Europe, 1933-45. Historical, social background of European Jewish communities. Anti-Semitism and Nazism. Ghettos under Nazi rule; social and cultural organization, government. Nazi terror and destruction; Jewish resistance; historical consequences. (No prereq. Meets concurrently with ReIS 3541)

Winter Qtr, Sec 1, Th, 6:20-8:50, FolH 306, Feinstein

(See also CSch 0108, Indelible Images: Contemporary Artists Confront the Holocaust)

Ancient Studies (AnSt)

(230 Folwell Hall: 625-2503)

College of Liberal Arts

Textbooks for most AnSt courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Ancient Studies. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Archaeological Fieldwork in Greece—Intensive fieldwork opportunities each summer in Bronze Age, Classical, and Medieval archaeology. For information, call the Global Campus at 625-3379

(See also Anthropology and The Compleat Scholar noncredit courses)

No AnSt courses offered through Extension Classes 1993-94.

Animal Science (AnSc)

(122 Peters Hall: 624-2722)

College of Agriculture

Textbooks for most AnSc courses are available at Books Underground on the St. Paul campus (624-9200).

(See also College of Veterinary Medicine; and Research Explorations [REX])

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in Animal Science. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

No AnSc courses offered through Extension Classes 1993-94.

Anthropology (Anth)

(215 Ford Hall: 625-3400)

College of Liberal Arts

Textbooks for most Anth courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Ancient Studies; General College courses in Social Issues; Research Explorations [REX]; and The Compleat Scholar noncredit courses)

Kathleen Barlow Lecturer
Luther Gerlach, Professor
Mischa Penn, Associate Professor
Gloria Goodwin Raheja, Associate Professor
William L. Rowe, Professor
Marc Schiltz, Lecturer
Peter S. Wells, Professor

Most courses needed for a major in Anthropology can be completed in the evening.

Interested students should discuss plans with an adviser (625-2500).

B.A. Major Sequence for those beginning an Anthropology major.

Required Preparatory Courses 1101, 1102

Major Requirements

(1) Two of the following courses: Anth 3111, 3201, 3302, 3366 (9-10 cr); (2) Either Anth 5104 or 5592 (4 cr); (3) Five electives from 3xxx and 5xxx courses, two of which must be at the 5xxx level (minimum of 20 cr.); senior project completed through direct research or senior seminar (4 cr).

Students should consult Undergraduate Handbook and Department advisers regarding recommended courses for subfield concentrations, i.e., archaeological social/cultural and physical anthropology.

You need not be majoring in Anthropology to register for these classes.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Anthropology. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

International Internships and Study Abroad—Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

Continuing Education for Women (CEW) section available in the following course: Anth 1102

Anth 1101 HUMAN ORIGINS. 5 credits, §1001, tuition*: Resident \$350; Non-resident \$1015. (IS)

Introduction to world prehistory as investigated by archaeologists; the basic methods and concepts employed by archaeologists in the study of prehistoric human biological and cultural development. (No prereq)

Fall Qtr, Sec 1, T, 6:20-9:30, FordH 285

Winter Qtr, Sec 2, M, 6:20-9:30, FordH 285

Anth 1102 INTRODUCTION TO SOCIAL AND CULTURAL ANTHROPOLOGY. 5 credits, §1002, tuition*: Resident \$350; Non-resident \$1015. (IS)

Varieties and range of human behavior as revealed through comparative study of cultures in all parts of the world. Sec 3, offered through Continuing Education for Women, is a cross-cultural approach to the study of systems of beliefs and patterns of customary behavior. The following topics will be examined from a comparative perspective: language and communication, kinship and family, sex roles, cultural ecology, economic systems, law and politics, religion and world view, cultural change. (No prereq)

Fall Qtr, Sec 1, M, 6:20-9:30, FordH 55

Winter Qtr, Sec 2, T, 9 a.m.-12, MacP, Barlow.

Offered through Continuing Education for Women

Winter Qtr, Sec 3, W, 6:20-9:30, FordH 155

Spring Qtr, Sec 4, T, 6:20-9:30, FordH 55

Anth 3003 THE RISE OF CIVILIZATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Beginnings of agriculture and emergence of world civilizations. Development of state societies from an archaeological perspective. (No prereq)

Spring Qtr, Sec 1, T, 6:20-8:50, FordH 285,

Wells

Anth 3111 INTRODUCTION TO ARCHAEOLOGY. 5 credits, tuition*: Resident \$367.50; Non-resident \$1065.75.

Introduction to the fundamentals of archaeological field and laboratory analysis. (No prereq)

Winter Qtr, Sec 1, Th, 6:20-9:30, FordH 285, Wells

Anth 3131 RELIGION AND CULTURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Anthropological perspectives on religion. Religion in relation to social order and individual life cycle. Religion and cultural change. (Prereq 1102 or #)

Winter Qtr, Sec 1, T, 6:20-8:50, FordH 120, Penn

Anth 3201 APPROACHES IN CULTURAL ANTHROPOLOGY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Humanistic and scientific conceptions of culture. Interpretation and explanation. Theoretical foundations of current anthropological thought. (Prereq 1102 or #)

Spring Qtr, Sec 1, Th, 6:20-8:50, FordH 285,

Raheja

Anth 3241 PEOPLES AND CULTURES OF AFRICA. 4 credits, §Afro 3501, tuition*: Resident \$294; Non-resident \$852.60.

Key aspects of society, culture, and ecological adaptation of African people south of the Sahara. Aesthetic expression, social, economic, political, and religious systems. Theoretical problems in African anthropology. (No prereq)

Winter Qtr, Sec 1, M, 6:20-8:50, FordH 120,

Schiltz

Anth 3303 WOMEN: ANTHROPOLOGICAL PERSPECTIVES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

A cross-cultural, comparative study of women and gender. Theoretical and methodological approaches in anthropology to the study of gender. (Prereq 1102; WoSt 1101, WoSt 1002 recommended)

Fall Qtr, Sec 1, Th, 6:20-8:50, FordH 285, Barlow

Anth 5102 PRINCIPLES OF CULTURAL ANTHROPOLOGY. 4 credits, §Anth 1102, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Elements of cultural anthropology. Range and variability of human behavior. Principles of cultural dynamics. An introductory course designed for upper division and graduate students. (Prereq jr or #. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, W, 6:20-8:50, FordH 175, Penn

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Anth 5116 ECOLOGICAL ANTHROPOLOGY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Anthropological approaches to human-environment interactions. Marxist, ecological, biological, humanistic, and ethnoscientific approaches to culture and resources. Issues of energetics, production, consumption, values, and conservation. (Prereq 1102, 3201 or 5102. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, M, 6:20-8:50, FordH 120, Gerlach

Anth 5592 HISTORY OF ARCHAEOLOGY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Survey of the history of archaeology with emphasis on the development of major concepts and research goals. (Prereq 12 cr in 3xxx or 5xxx anthropology courses. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, W, 6:20-8:50, FordH 150, Wells

Anth 5920 TOPICS IN ANTHROPOLOGY: ANTHROPOLOGY OF AIDS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Analysis of Acquired Immune Deficiency Syndrome (AIDS) phenomena in its cultural, social, economic, medical, and psychological dimensions. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, Sec 1, TTh, 4:30-6, FordH 120, Rowe

(See also PubH 5010, Public Health Approaches to AIDS)

Arabic

(See Afro-American and African Studies)

Archaeology

(See Anthropology; Classical Studies; Research Explorations [REX]; the Global Campus; and The Compleat Scholar noncredit courses)

Architecture (Arch)

(110 Architecture: 624-7866)

College of Architecture and Landscape Architecture

Textbooks for most Arch courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Landscape Architecture; Art History; and The Compleat Scholar noncredit courses)

Lee Anderson, Assistant Professor

John C. Carmody, Coordinator

Rodney E. Erickson, CCS, Principal, ATSR Architects

Dennis Grebner, Professor

Julie G. Luers, Ellerbe Becket

Robert Mack, Lecturer

Lance Neckar, Associate Professor of Landscape Architecture

Julia Robinson, Associate Professor

Leon Satkowski, Associate Professor

Larry Seiberlich, Lecturer

J. Stephen Weeks, Associate Professor

David Stovall, AIA, KKE Architects

Degree programs in Architecture

The study of architecture combines history, science, and the arts as foundations for the pursuit of a career in architecture. The Department of Architecture seeks students with demonstrated academic, artistic, and creative skills. Above all, successful majors must demonstrate a capacity to think for themselves and work collectively and independently. While a degree program in architecture is not offered through Extension, a majority of the preparatory and required course work for the Bachelor of Arts with a major in Architecture can be completed in the evening. At the University of Minnesota, students are admitted to the Bachelor of Arts with a major in Architecture after having completed 90 credits of prerequisite and general education classes.

For preparatory course work descriptions, see the bulletins for the College of Liberal Arts and the College of Architecture and Landscape Architecture. The College of Architecture and Landscape Architecture bulletin outlines the B.Arch. degree program in detail, and can be requested by calling (612) 625-2008. For further information, contact an architecture adviser at 110 Architecture, (612) 626-1000. The B.A. in Architecture is available through the College of Liberal Arts. For advising, contact a CEE adviser at (612) 625-2500.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Architecture. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Study Abroad—Architecture students can earn credit in study abroad courses. For information, call the Global Campus at 625-3379.

Arch 1031 VISUAL THINKING. 4 credits, tuition* (includes \$5 course fee): Resident \$285; Non-resident \$817.

Conceptual thinking, visual understanding, introduction to "R-mode" (right brain hemisphere) thinking through observation, conception, and drawing, translation from "Verbal/Logical" thinking to the "Creative/Intuitive" mode. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, T, 6:10-9:20, Arch 20, Grebner

Arch 1032 COLOR THEORY/USE. 4 credits, tuition* (includes \$5 course fee): Resident \$285; Non-resident \$817.

Survey of color as a design element, color theory, the physics of color, substance, interaction and use; symbolism and color effects and use; architectural application of principles and theory. (No prereq. Limited to 30)

Winter Qtr, ★Sec 1, T, 6:10-9:20, Arch 10, Grebner

Arch 1301 INTRODUCTION TO ARCHITECTURAL DRAWING. 4 credits, §LA 1301, tuition* (includes \$25 course fee): Resident \$305; Non-resident \$837.

Emphasizes visualization and drawing of form and space in the physical environment. Explores basic elements of form of using design drawing systems and conventions. Develops skills in visual literacy and expression through drawing. *Required for the major.* (No prereq. Limited to 25)

Fall Qtr, ★Sec 1, MW, 5:30-8:30, Arch 15

Winter Qtr, ★Sec 2, MW, 5:30-8:30, Arch 15, 30, 60

Spring Qtr, ★Sec 3, MW, 5:30-8:30, Arch 15

Arch 3033 VISUAL COMMUNICATION TECHNIQUES IN ARCHITECTURE. 4 credits, tuition* (includes \$5 course fee): Resident \$335; Non-resident \$962.

Professional delineation, primarily intended for more advanced students in architectural design; exploration and use of variety of presentation and study techniques; methods/media investigation, modern techniques. (Prereq 1043 or #. Limited to 30)

Spring Qtr, ★Sec 1, T, 6:10-9:20, Arch 10, Grebner

Arch 3311 DRAWING FOR DESIGN. 4 credits, §LA 3311, tuition* (includes \$25 course fee): Resident \$355; Non-resident \$982.

Explores drawing processes as modes of perception, cognition, and reflection. Representational aspects of drawing systems and conventions, develops understanding of space, light, and order. *Required for the major.* (Prereq Arch or BED major, Arch 1301 or LA 1301 or #. Limited to 25)

Fall Qtr, ★Sec 1, MW, 5:30-8:30, Arch 25

Winter Qtr, ★Sec 2, MW, 5:30-8:30, Arch 40

Spring Qtr, ★Sec 3, MW, 5:30-8:30, Arch 55

Arch 3411 HISTORY OF ARCHITECTURE TO 1750. 4 credits, §LA 3411, §ArH 3411, tuition* (includes \$5 course fee): Resident \$335; Non-resident \$962.

History of architecture and city planning from antiquity to 1750, as illustrated by major monuments from Western and non-Western cultures. *Required for the major.* (No prereq. Meets concurrently with LA 3411, ArH 3411. Limited to a combined total of 100)

Fall Qtr, ★Sec 1, Th, 5:30-8:40, Arch 40, Satkowski

Arch 3412 HISTORY OF ARCHITECTURE SINCE 1750. 4 credits, §LA 3413, tuition* (includes \$5 course fee): Resident \$335; Non-resident \$962.

(No prereq. Meets concurrently with LA 3412, ArH 3412. A joint Day/Extension class limited to a combined total of 100)

Winter Qtr, ★Sec 1, Th, 5:30-8:40, Arch 25, Satkowski

Arch 3413 HISTORY OF LANDSCAPE ARCHITECTURE. 4 credits, §LA 3413, §ArH 3412, tuition* (includes \$5 course fee): Resident \$335; Non-resident \$962.

Lecture course introduction to history and theoretical issues of landscape architecture in typologically based survey format. Course covers landscape design from the ancient to the modern periods. (No prereq. Meets concurrently with Arch 3413. A joint Day/Extension class limited to a combined total of 100)

Spring Qtr, ★Sec 1, TTh, 5:30-7:20, Phys 150, Neckar

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Arch 5141 HISTORIC PRESERVATION. 4 credits, tuition* (includes \$5 course fee): Resident \$335; Non-resident \$962; Resident Graduate credit \$401; Non-resident Graduate credit \$797; Resident Graduate School credit \$689; Non-resident Graduate School credit \$1373.

Philosophy and theory of historic preservation, historic origins, building documentation, technology of building conservation, historical archaeology, economic considerations, preservation law, guidelines for preservation, and case studies of representative preservation projects. (Prereq 1021 or #. Intended for advanced students in architecture, but open to the architectural profession and to any student who has fulfilled the prereq. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, TTh, 5:15-7, Arch 35, Mack

Arch 5142 HISTORIC BUILDING CONSERVATION. 4 credits, tuition* (includes \$5 course fee): Resident \$335; Non-resident \$962; Resident Graduate credit \$401; Non-resident Graduate credit \$797; Resident Graduate School credit \$689; Non-resident Graduate School credit \$1373.

Historic building systems, materials and methods for their conservation; introduction of contemporary systems in historic buildings. (Prereq 5141 or #. Intended for students in architecture, but open to any student who has fulfilled the prereq. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, TTh, 5:15-7, Arch 35, Mack

Arch 5143 HISTORIC BUILDING RESEARCH AND DOCUMENTATION. 4 credits, tuition* (includes \$5 course fee): Resident \$335; Non-resident \$962; Resident Graduate credit \$401; Non-resident Graduate credit \$797; Resident Graduate School credit \$689; Non-resident Graduate School credit \$1373.

Philosophy, theory, and method of historic building research, descriptive analysis of buildings, building documentation, historical archaeology, and architectural taxonomy. (Prereq 5141 or #. Intended for students in architecture, but open to any student who has fulfilled the prereq. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, TTh, 5:15-7, Arch 25, Mack

Arch 5128 LAW FOR ARCHITECTS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Legal subject matter relevant to the work of architects and design professionals. (Prereq 3093 or Δ. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, W, 6:15-9:20, Arch 20, Tanick

Arch 5281 ARCHITECTURE STUDIO I: FUNDAMENTALS OF SPACE AND FORM. 6 credits, tuition* (includes \$25 course fee): Resident \$520; Non-resident \$1460.50; Resident Graduate credit \$619; Non-resident Graduate credit \$1213; Resident Graduate School credit \$1051; Non-resident Graduate School credit \$2077.

Introduction to elements of architecture, qualities of space, principles of design and systems of order found in everyday objects, experiences, and forms of nature. Application of visual tools—models, drawings, and graphics—and design principles to three-dimensional form and composition. Lecture, critique, and small design problems. (Prereq Arch major and 3311 or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 16)

Winter Qtr, ★Sec 1, MW, 5-9, Arch 20; Sa, 8:30 a.m.-12:30, Arch 20

Arch 5282 ARCHITECTURE STUDIO II: STRUCTURE AND ORDER. 6 credits, tuition* (includes \$25 course fee): Resident \$520; Non-resident \$1460.50; Resident Graduate credit \$619; Non-resident Graduate credit \$1213; Resident Graduate School credit \$1051; Non-resident Graduate School credit \$2077.

Application of design processes in developing understandings of the relationship between architecture and meaning. Creation of order, architectural form and space within the context of cultural and technological conditions of our time. Exploration of structure systems within the context of increasingly complex design projects. Lecture, design projects, and critiques. (Prereq Arch 5281, Arch 3311 or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 16)

Spring Qtr, ★Sec 1, MW, 5-9, Arch 30; Sa, 8:30 a.m.-12:30, Arch 30

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Arch 5535 LIGHT FRAME BUILDINGS: DESIGN FOR ENERGY EFFICIENCY, HEALTH, AND DURABILITY. 4 credits, tuition* (includes \$5 course fee): Resident \$335; Non-resident \$962; Resident Graduate credit \$401; Non-resident Graduate credit \$797; Resident Graduate School credit \$689; Non-resident Graduate School credit \$1373.

Design and construction principles, problems, and solutions for housing and small commercial structures that improve comfort and energy efficiency. Building envelope assemblies—roofs, wall, and foundations—and their integration with basic building systems. Discussion and resolution of common problems associated with these construction methods, such as infiltration, degradation from moisture, and poor indoor air quality. (Prereq 3062, 3064 or #. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, W, 6:15-9:20, CivMinE 213,
Carmody, Weeks

Arch 5850 TOPICS IN THEORY: FEMINIST APPROACHES TO ARCHITECTURE. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Analyzes theoretical architectural literature in light of current feminist theory. Feminist readings will be used as a basis for investigating architectural texts. Considered will be voice of the writer, conception of the audience, definition of architecture, view of the architect, attitude toward the user and society, and ideas about context, nature, and materials. Primarily for upper-level undergraduate and graduate students. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 15)

Spring Qtr, ★Sec 1, T, 6:10-9:20, Arch 60,
Robinson

Arch 5961 COMPUTER-AIDED ARCHITECTURAL DESIGN. 4 credits, tuition* (includes \$40 course fee): Resident \$370; Non-resident \$997; Resident Graduate credit \$436; Non-resident Graduate credit \$832; Resident Graduate School credit \$724; Non-resident Graduate School credit \$1408.

An introductory computer-aided architectural design course which includes Pascal programming as an introduction to computing; creating database for 3D modeling; selection and implementation of business microcomputers and CAD systems; hardware and software selection, trends, and anticipated developments. (Prereq Arch major, 3083 or #. Qualified

students may register for graduate credit at the University of Minnesota. Limited to 30)

Winter Qtr, ★Sec 1, W, 6:10-9:20, Arch 45,
Anderson

Arch 5970 DIRECTED STUDY. Credits arranged. Each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Subject matter arranged. Areas of study useful to individual program objectives not available in regular course offerings. Independent study in Architecture through foreign travel programs may be arranged. (Prereq written #. Qualified students may register for graduate credit at the University of Minnesota.) Contact Prof. Stephen Weeks, 110D Arch, University of Minnesota, Minneapolis, Minnesota 55455 (624-2832).

Architecture Continuing Professional Education Courses

All 0xxx-level Arch courses must be taken S-N.

Arch 0015 MARKETING ARCHITECTURAL SERVICES. No credit, tuition* (includes \$10 special fee): \$150.

This eight-week series addresses marketing professional architectural/engineering services as the critical point of departure for the creative and successful practice of both small and large organizations. The fundamentals of planning, management, and implementation of the business development process for research, lead generation, qualifications, strategizing, proposals, presentations, and contract closing. **Must be taken S-N.** (No prereq)

Winter Spec Term, Sec 1, M, 6:10-9:20, Jan.

3-Feb. 28, 1993 (8 meetings—no class Jan. 17), Arch 35, Luers

Arch 0018 THE ELECTRIC ARCHITECT. No credit, tuition*: \$140.

A seminar series devoted to improving the use of the personal computer in the architectural environment with primary focus on the Apple Macintosh computer technology. This five-part seminar is intended to help architects discover how to use the personal computer to its full potential. The series will demonstrate the optimum use of available software and hardware options in relation to an integrated spectrum of office tasks including accounting, information and project management, networking and communications, 2D and 3D CADD, presentation techniques, desktop publishing, and multimedia. Material will be presented on a "task/software" basis, and will involve practical

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

demonstrations with recommendations on the best software and techniques to use, lecture/presentations, output examples, panel and group discussions. **Must be taken S-N.** (No prereq)

Fall Spec Term, Sec 1, Th, 6-9, Oct. 7, 14, 21, 28, Nov. 4, 11 (6 meetings), Arch 10, Stovall.
No late fee through Sept. 30

Contract Document Series

A three-course series intended to provide the intern architect with an in-depth understanding of the technical and administrative aspects of contract documents, bidding, and construction phases of architectural practice. Courses are designed to fulfill categorical IDP requirements in addition to preparing the intern to perform more effectively in the office and be more adequately prepared for the registration exams. Each course consists of eight meetings and is structured to involve the student in an interactive format using lecture/demonstrations, group discussion, and hands-on assignments with instructor feedback.

Arch 0019 CONTRACT DOCUMENTS I: DRAWINGS, DD-CD. No credit, tuition*: \$140. An in-depth look at the organization, intentions, and the "how to" of design development drawings, construction drawings (the production methods, detail development, scheduling, and checking), code analysis, cost estimating, and analysis. **Must be taken S-N.** (No prereq)

Fall Spec Term, Sec 1, W, 6-9, Sept. 29-Nov. 17 (8 meetings), Arch 35, Erickson. *No late fee through Sept. 22*

Arch 0020 CONTRACT DOCUMENTS II: SPECIFICATIONS. No credit, tuition*: \$140.

Focuses on the intent, organization, and development of specifications (contract conditions, insurance/bonding, project budgeting, and scheduling), product research, and selection. **Must be taken S-N.** (No prereq)
Winter Spec Term, Sec 1, W, 6-9, Jan. 5-Feb. 23 (8 meetings), Arch 25, Erickson. *No late fee through Dec. 29*

Arch 0021 CONTRACT DOCUMENTS III: CONSTRUCTION. No credit, tuition*: \$140.

A comprehensive look at the construction phase from bidding through post-construction evaluation. Topics include contractual relations, bid/negotiation processes, work planning and scheduling, contractor submittals, payment certification, construction observation, and closeout. **Must be taken S-N.** (No prereq)
Spring Spec Term, Sec 1, W, 6-9, Apr. 6-May 25 (8 meetings), Arch 25, Erickson. *No late fee through Mar. 30*

Architectural Registration Exam (A.R.E.) Review Courses

Arch 0009 A.R.E. REVIEW COURSE. No credit, tuition* (includes \$10 special fee): \$150.

Conceptual/intuitive approach to structural systems for those in need of more than a minor review, and exam preparation. **Must be taken S-N.** (No prereq)
Fall Spec Term, Sec 1, Th, 6:10-9, Sept. 23-Nov. 11, Arch 60, Seiberlich. *No late fee through Sept. 16*

Arch 0010 A.R.E. REVIEW COURSE. No credit, tuition* (includes \$10 special fee): \$150.

Preparation for professional registration examinations. Structural design—Sections D, E, F. **Must be taken S-N.** (No prereq)
Winter Spec Term, Sec 1, Th, 6:10-9, Jan. 13-Mar. 3, Arch 10, Seiberlich. *No late fee through Jan. 6*

Arch 0011 A.R.E. REVIEW COURSE. No credit, tuition* (includes \$10 special fee): \$150.

Preparation for professional registration examinations. Mechanical, Plumbing, Electrical, Life Safety Systems—Section G. **Must be taken S-N.** (No prereq)
Spring Spec Term, Sec 1, T, 6:10-9, Mar. 29-May 17, Arch 15, Seiberlich. *No late fee through Mar. 22*

Arch 0012 A.R.E. REVIEW COURSE. No credit, tuition* (includes \$10 special fee): \$150.

Preparation for professional registration examinations. Site and Building Design—Sections A, B, C. **Must be taken S-N.** (No prereq)
Spring Spec Term, Sec 1, Th, 6:10-9, Mar. 31-May 19, Arch 15, Seiberlich. *No late fee through Mar. 24*

Area Studies Programs

(232A Social Sciences: 624-8543)

College of Liberal Arts

Textbooks for most courses offered through Area Studies Programs on the East Bank campus are available at the Minnesota Book Center in Williamson Hall (625-6000); courses offered on the West Bank campus are at the Harold D. Smith Bookstore (625-3000); and those offered on the St. Paul campus are at Books Underground (624-9200).

Byron K. Marshall, Professor of History
Robert J. Poor, Professor of Art History

For information about study abroad opportunities, read about the Global Campus on page 466.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in courses offered through Area Studies Programs. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Study in China—Students can spend the summer studying the Chinese language at Nankai University in China. For information, call the Global Campus at 626-7134.

East Asian Studies (EAS)

EAS 1463 INTRODUCTION TO EAST ASIA IN MODERN TIMES. 4 credits, §Hist 3463, tuition*: Resident \$280; Non-resident \$812.

Decline of Asian empires; European and American imperialism; Asian responses; nationalism; social revolution, reintegration, modernization in China, Japan, Vietnam, Korea; retreat of European and American empires. (No prereq. Meets concurrently with Hist 3463)

Winter Qtr, Sec 1, W, 6:20-8:50, BlegH 415

EAS 3013 INTRODUCTION TO EAST ASIAN ART. 4 credits, §ArtH 3013, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60

Major themes of Far Eastern art. Arts of China and Japan. (No prereq. Meets concurrently with ArtH 3013. Limited to a combined total of 200)

Fall Qtr, ★Sec 1, Th, 6:20-8:50, AndH 310, Poor

EAS 3465 CHINA'S RESPONSE TO THE WEST, 1750-1911. 4 credits, §Hist 3465, tuition*: Resident \$294; Non-resident \$852.60.

Eighteenth-century demographic crisis; the growth of Western trade, opium wars and peasant rebellion; early reform efforts, cultural conflicts with the West, imperialism in China, and the first phase of the Chinese revolution. (No prereq. Meets concurrently with Hist 3465)

Fall Qtr, Sec 1, Th, 6:20-8:50, BlegH 140

EAS 3467 THE NATIONALIST REVOLUTION IN CHINA: 1900 TO PRESENT. 4 credits, §Hist 3467, tuition*: Resident \$294; Non-resident \$852.60.

Failure of the early republic, warlordism, the new culture movement, and the development of Chinese nationalism. The rise of the Nationalist Party and intervention of the Soviet Union, Japan, and the United States, Taiwan, and the People's Republic of China. (No prereq. Meets concurrently with Hist 3467)

Winter Qtr, Sec 1, Th, 6:20-8:50, BlegH 350

EAS 3468 PEOPLE'S REPUBLIC OF CHINA: THE COMMUNIST REVOLUTION, 1900 TO PRESENT. 4 credits, §Hist 3468, 5468, tuition*: Resident \$294; Non-resident \$852.60.

Introduction of Marxism in China, rise of Communist Party, and development of a rural guerilla movement. The career of Mao Tse-tung and developments in People's Republic: the Great Leap, Cultural Revolution, Gang of Four. (No prereq. Meets concurrently with Hist 3468)

Spring Qtr, Sec 1, Th, 6:20-8:50, BlegH 350

EAS 3471 20TH-CENTURY JAPAN. 4 credits, §Hist 3471, §Hist 5471, tuition*: Resident \$294; Non-resident \$852.60.

The development of an industrial society, parliamentary government, mass culture, and imperialism from the Meiji reforms to the late 19th century through World War II to the contemporary period. (No prereq. Meets concurrently with Hist 3471 and 5471)

Fall Qtr, Sec 1, M, 6:20-8:50, BlegH 135, Marshall

Latin American Studies (LAS)

LAS 3401 SURVEY OF LATIN AMERICAN HISTORY: COLONIAL PERIOD TO 1800. 4 credits, §Hist 3401, tuition*: Resident \$294; Non-resident \$852.60.

The pre-Hispanic and colonial period to 1800, with emphasis on social, cultural, and economic aspects. (No prereq. Meets concurrently with Hist 3401)

Winter Qtr, Sec 1, M, 6:20-8:50, BlegH 205

LAS 3402 SURVEY OF LATIN AMERICAN HISTORY: 1800-1929. 4 credits, §Hist 3402, tuition*: Resident \$294; Non-resident \$852.60.

Development of new nations from independence to the emergence of dependent economies. (No prereq. Meets concurrently with Hist 3402)

Spring Qtr, Sec 1, M, 6:20-8:50, HHCtr 60

LAS 3403 SURVEY OF LATIN AMERICAN HISTORY: 1929 TO PRESENT. 4 credits, §Hist 3403, tuition*: Resident \$294; Non-resident \$852.60.

Contradictions of modern societies: economic expansion, dependency, population growth and the social crisis, democratic and authoritarian politics. (No prereq. Meets concurrently with Hist 3403)

Fall Qtr, Sec 1, T, 6:20-8:50, BlegH 140

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

LAS 5132 SOUTH AMERICA. 4 credits, §Geog 5132, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Physical resources, population, agriculture, manufacturing, and transportation in countries of South America. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Geog 5132. A joint Day/Extension class)

Winter Qtr, ○Sec 1, M, 6:20-8:50, BlegH 415

International Internships and Study Abroad—Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

Art Education (ArEd)

(125 Peik Hall: 625-6372)

College of Education

(Department of Curriculum and Instruction)

Textbooks for most ArEd courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(Also see the listing for MacPhail Center for the Arts)

Margaret DiBlasio, Associate Professor
Kerry Freedman-Norberg, Associate Professor

Restriction in Art Education classes—A student who does not attend the first class session will, at the instructor's discretion, not be allowed to continue. If it is not possible to attend the first class session, the student should contact the instructor in advance (or the Art Education office at 625-7818) to make necessary arrangements to hold a place in class.

Enrollments in limited classes in this department are strictly enforced. Neither the department nor the course instructor will give written permission for registration in these classes once the limit is reached and the class closes.

ArEd 5001 ART MEDIA TECHNIQUES. 1-12 credits (maximum 12 cr). 3 credits this offering, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Lectures, demonstrations, discussions, critique sessions exploring and learning various techniques and processes in creativity; handling specific media. Focus this offering: Evaluation in the Arts. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension Students)

Spring Qtr, ★○Sec 1, T, 4:40-7:10, PeikH 40, DiBlasio

ArEd 5302 CURRICULUM INNOVATIONS IN ART EDUCATION. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Study and analysis of innovations, evaluation of materials for teaching units and projects. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension Students)

Fall Qtr, ★○Sec 1, TTh, 5-7:05, PeikH 40, DiBlasio

ArEd 5316 INTERCULTURAL EDUCATION THROUGH ART. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Approaches to international understanding through recognition of aesthetic contributions of diverse peoples to American life. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension Students)

Spring Qtr, ★○Sec 1, W, 4:40-7:10, PeikH 40, Freedman-Norberg

ArEd 5318 ART EDUCATION IN EUROPE. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Current practices, problems, and achievements in art education in Western Europe compared with practices in American art education. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension Students)

Fall Qtr, ★○Sec 1, W, 4:40-7:10, PeikH 40, Freedman-Norberg

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Day School Classes—In addition to the Extension Classes listed above, day school classes are sometimes offered to educators during late afternoon, early evening, and weekend hours. For registration information about day school College of Education courses see page 148 or call 625-6501.

Art History (Arth)

(107 Jones Hall: 624-4500)

College of Liberal Arts

Textbooks for most Arth courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Architecture; Classics and Near Eastern Studies; General College; The Compleat Scholar noncredit courses; and REX 0802, Artistic Discovery in 17th-Century Naples)

Frederick Cooper, Professor

Helen Griebel, Lecturer

Jane Hancock, Lecturer

Bruce Jenkins, Adjunct Associate Professor

Sheila McNally, Professor

Marion Nelson, Professor Emeritus

Robert Poor, Professor

Leon Satkowski, Associate Professor of Architecture

Robert Silberman, Associate Professor

A major in Art History can be completed in the evening.

Those courses required in the major are usually offered each year. Students interested in completing an Art History major or minor through Extension Classes should discuss plans with the director of undergraduate studies (624-0847).

B.A. Major Sequence

Required Preparatory Courses

4 cr art practice (consult undergraduate studies director); 6 qtrs or equiv in a second language

Major Requirements

37 credits including 3008, 3009, 3011, 3012, a minimum of 20 cr in five additional art history courses, including one in film or folk art or a non-Western field. **All courses must be taken A-F.** Each student must complete a major project consisting of a) a preliminary research paper in a designated "project course" which may be either Arth 3930 (jr-sr seminar) or any 5xxx course (by agreement with the instructor); b) Arth 3971, Major Project Research Paper. The major project course must be selected in consultation with the director of undergraduate studies.

(Consult Arth department regarding major project.)

You need not be majoring in Art History to register for these classes.

Continuing Education for Women (CEW) sections available in the following courses: Arth 3035, 3152

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Art History. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Study in Europe—Students interested in Art History will find study abroad programs in Architecture in Europe or China/Japan, Interior Design and Art in Greece available through the Global Campus. For information, call 625-3379.

Arth 1002 INTRODUCTION TO THE HISTORY OF ART. 4 credits, tuition* (includes \$5 course fee): Resident \$285; Non-resident \$817.

The history of art, examined through selected monuments from the major periods of art from The Paleolithic to modern times, covering both Western and non-Western cultures. (No prereq)

Fall Qtr, Sec 1, W, 6:20-8:50, AndH 310,

Cooper

Spring Qtr, Sec 2, W, 6:20-8:50, AndH 310,

Cooper

Arth 1921 INTRODUCTION TO FILM STUDY. 4 credits, §CSCL 1921, tuition* (includes \$20 course fee): Resident \$300; Non-resident \$832.

Fundamentals of film language and major theories of film, presented through detailed analysis of several films. (No prereq. Meets concurrently with CSCL 1921)

Spring Qtr, Sec 1, T, 6-9, AndH 310, Jenkins

Arth 3008 HISTORY OF ANCIENT ART. 4 credits, §1008, §Clas 3008, tuition* (includes \$5 course fee): Resident \$285; Non-resident \$817.

The architecture, sculpture, and painting of selected early cultures, with particular stress on those contributing to the development of Western art. (No prereq. Meets concurrently with Clas 3008. Limited to a combined total of 50)

Winter Qtr, ★Sec 1, W, 6:20-8:50, FolH 306,

Cooper

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Arth 3012 HISTORY OF 19TH- AND 20TH-CENTURY ART. 4 credits, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60. Major monuments and concepts of the modern period: sculpture, architecture, painting, and prints. (No prereq)
 Fall Qtr, Sec 1, M, 4:30-7, FolH 306, Nelson
 Winter Qtr, Sec 2, T, 6:20-8:50, FolH 306, Hancock

Arth 3013 INTRODUCTION TO EAST ASIAN ART. 4 credits, §EAS 3013, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60. Major themes of Far Eastern art. The arts of China and Japan (not all-inclusive). (No prereq. Meets concurrently with EAS 3013. Limited to a combined total of 200)
 Fall Qtr, ★Sec 1, Th, 6:20-8:50, AndH 310, Poor

Arth 3035 MYTHOLOGY IN WESTERN ART. 4 credits, §Clas 3035, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60. Selected figures and events from Classical mythology as ancient artists first depicted them, and as they have appeared in later Western art. (No prereq. Meets concurrently with Clas 3035)
 Spring Qtr, Sec 1, W, 1:30-4, Mpls Institute of Arts, Auditorium, 2400 S. 3 Ave., McNally.
Offered through Continuing Education for Women

Arth 3152 GREEK ART AND ARCHAEOLOGY. 5 credits, §Clas 3152, tuition* (includes \$5 course fee): Resident \$372.50; Non-resident \$1070.75. Architecture, sculpture, painting, and archaeology from 1050 B.C. to 31 B.C. (No prereq. Meets concurrently with Clas 3152)
 Fall Qtr, Sec 1, W, 1:30-4, Mpls Institute of Arts, Auditorium, 2400 S. 3 Ave., McNally.
Offered through Continuing Education for Women

Arth 3411 HISTORY OF ARCHITECTURE TO 1750. 4 credits, §LA 3411, §Arch 3411, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60. History of architecture and city planning from antiquity to 1750, as illustrated by major monuments from Western and non-Western cultures. (No prereq. Meets concurrently with LA 3411, Arch 3411. Limited to a combined total of 100)
 Fall Qtr, ★Sec 1, Th, 5:30-8:40, Arch 40, Satkowski

Arth 3412 HISTORY OF ARCHITECTURE SINCE 1750. 4 credits, §LA 3412, §Arch 3412, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60.

A history of the major monuments, concepts, and theories of urbanism and architecture since 1750. (No prereq. Meets concurrently with LA 3412, Arch 3412. A joint Day/Extension class limited to a combined total of 100)
 Winter Qtr, ★Sec 1, Th, 5:30-8:40, Arch 25, Satkowski

Arth 3466 THE ORIGINS OF MODERN ART. 4 credits, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60. The source of modernism: impressionism, post-impressionism, symbolism, arts and crafts movement, aestheticism, art nouveau. (No prereq. Limited to 100)
 Fall Qtr, ★Sec 1, T, 6:20-8:50, FolH 306, Hancock

Arth 3585 AFRO-AMERICAN ART. 4 credits, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60. History of Afro-American art from the 18th century through the present day. (No prereq. Limited to 60)
 Winter Qtr, ★Sec 1, Th, 6:20-8:50, JonesH 207B, Griebel

Arth 3940 TOPICS: VIDEO AS AN ART FORM. 4 credits, §Arth 5940, §ArtS 3655, tuition* (includes \$20 course fee): Resident \$314; Non-resident \$872.60. Surveys the three-decade history of video art and the major genres (performance, installation, conceptual, nonfiction, and experimental) that have emerged. Screenings, discussions, and readings will focus on developing aesthetic and critical contexts for analyzing and interpreting this new form of artistic expression. (No prereq. Meets concurrently with Arth 5940, sec 1 and ArtS 3655. Limited to a combined total of 25)
 Winter Qtr, ★Sec 1, W, 6-9, Walker Art Center Conference Room, Jenkins

Arth 3940 FILM NOIR. 4 credits, §Arth 5940, tuition* (includes \$15 course fee): Resident \$309; Non-resident \$867.60. Examines the world of Film Noir—"black cinema," that distinctive film universe composed of equal parts of atmospheric visuals, hard-boiled dialog, and violent action. Films to be studied include John Huston's *The Maltese Falcon*, Billy Wilder's *Double Indemnity*, and Orson Welles's *Touch of Evil*, as well as the noir revival masterpiece, Roman Polanski's *Chinatown*. (No prereq. Meets concurrently with Arth 5940 sec 2)
 Spring Qtr, Sec 2, M, 6-9, AndH 310, Silberman

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.
 * Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Arth 3960 TOPICS: SCANDINAVIAN ART, 1880-1915. 4 credits, §Arth 5960, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60.

Considered the highest period of Scandinavian art, the turn of the century produced idyllic artists such as Carl Larsson, Anders Zorn, and Theodor Kittelsen, as well as the pioneer Expressionist Edvard Munch. Scandinavian nationalism and Art Nouveau in design will be covered along with the fine arts. (No prereq. Meets concurrently with Arth 5960)

Fall Qtr, Sec 1, W, 6:20-8:50, JonesH 207B, Nelson

Arth 5725 CERAMICS IN THE FAR EAST. 4 credits, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60; Resident Graduate credit \$401; Non-resident Graduate credit \$797; Resident Graduate School credit \$689; Non-resident Graduate School credit \$1373.

Survey of ceramic art in the Far East: China, Korea, and Japan, from Neolithic times to the present. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 50)

Winter Qtr, ★Sec 1, W, 6:20-8:50, JonesH

207A, Poor

Arth 5766 CHINESE PAINTING. 5 credits, tuition* (includes \$5 course fee): Resident \$372.50; Non-resident \$1070.75; Resident Graduate credit \$500; Non-resident Graduate credit \$995; Resident Graduate School credit \$860; Non-resident Graduate School credit \$1715.

Survey of major works from the 4th to the 17th centuries. Development of the landscape tradition and the literary genre of later Chinese painting. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 50)

Spring Qtr, ★Sec 1, Th, 6:20-8:50, JonesH

207A, Poor

Arth 5940 TOPICS: VIDEO AS AN ART FORM. 4 credits, §Arth 3940, §ArtS 3655, tuition* (includes \$15 course fee): Resident \$309; Non-resident \$867.60; Resident Graduate credit \$411; Non-resident Graduate credit \$807; Resident Graduate School credit \$699; Non-resident Graduate School credit \$1383.

See course description for Arth 3940, sec 1. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Arth 3940, sec 1 and ArtS 3655. Limited to a combined total of 25)

Winter Qtr, ★Sec 1, W, 6-9, Walker Art Center Conference Room, Jenkins

Arth 5940 FILM NOIR. 4 credits, §Arth 3940, tuition* (includes \$15 course fee): Resident \$309; Non-resident \$867.60; Resident Graduate credit \$411; Non-resident Graduate credit \$807; Resident Graduate School credit \$699; Non-resident Graduate School credit \$1383.

See course description for Arth 3940, sec 2. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Arth 3940 sec 2)

Spring Qtr, Sec 2, M, 6-9, AndH 310, Silberman

Arth 5960 TOPICS: SCANDINAVIAN ART, 1880-1915. 4 credits, §Arth 3960, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60; Resident Graduate credit \$401; Non-resident Graduate credit \$797; Resident Graduate School credit \$689; Non-resident Graduate School credit \$1373.

See course description for Arth 3960. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Arth 3960)

Fall Qtr, Sec 1, W, 6:20-8:50, JonesH 207B,

Nelson

Arth 5950 SPECIAL TOPICS IN ART HISTORY. 2 credits, tuition*: Resident \$147; Non-resident \$426.30; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Meets concurrently with a multidisciplinary course, ID 5615-5616-5617 (Ways of Knowing: Six Disciplines Examined), page 245. Faculty from six different disciplines meet together with students weekly for a full academic year to discover how various academic disciplines ask questions, gather information, and validate theories. Disciplines examined include genetics, African-American studies, economics, agriculture and applied economics, and art history. Students must enroll each quarter for four credits of the ID 5615-5616-5617 or four credits of corresponding special topics courses; students must enroll all three quarters to receive credit. Limited to a combined total of 18 students. **For information about registration and graduate credit, call (612) 625-3898.**

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Art (ArtS)

(208 Art Building: 625-8096)

College of Liberal Arts

Textbooks for most ArtS courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also General College courses in artistic expression; and The Compleat Scholar noncredit courses)

Guy Baldwin, Associate Professor
 Karl Bethke, Professor
 Victor Caglioti, Associate Professor
 Melisande Charles, Lecturer
 Thomas Cowette, Associate Professor
 Christopher E. Dashke, Lecturer
 Kim Downing, Lecturer
 David L. Feinberg, Associate Professor
 Curtis Hoard, Professor
 David Husom, Lecturer
 Bruce Jenkins, Adjunct Associate Professor in Art History
 Jerald Krepps, Associate Professor
 Thomas Lane, Associate Professor
 Susan Lucey, Associate Professor
 Monica Maye, Lecturer
 Alison Morse, Lecturer
 Malcolm Myers, Professor Emeritus
 Mark Pharis, Associate Professor
 Wayne Potratz, Professor
 Michael Rivard, Lecturer
 Herman Rowan, Professor Emeritus
 Jeff Sandeen, Lecturer
 Marcie Soderman-Olson, Lecturer
 Karen Wirth, Lecturer

Change in credit hours—The actual classroom and lab time in Extension Classes and day school ArtS courses have been adjusted to be equal. Therefore, all ArtS classes are four credits.

A major in ArtS can be completed in the evening

Most courses required in the major are offered in the evening each year. However, certain courses may be offered only every two or three years. It may be necessary for students seeking a B.F.A. in art to take some classes during the day in order to graduate.

Students considering a major in art should discuss plans with the coordinator of advising, 625-1848.

Students majoring in art must take all ArtS and ArTH courses A-F. Grades of A, B, or C are required in the major courses.

B.A. MAJOR SEQUENCE**Required Preparatory Courses:**

One art history course at the 1xxx level

ArtS 1101, 1401, 1404, 1301 or 1302

12 cr from 1102, 1301 or 1302, 1510, 1520, 1530, 1540, 1602, 1701, 1811, 1812

ArtS 1401 should be taken before other departmental courses, or concurrently with the other required 1xxx-level studio arts courses.

Major Requirements

At least 28 cr in studio arts courses at 3xxx/5xxx levels

8 cr in 3xxx/5xxx level art history courses

ArtS 3444, Senior Project, 2 cr, taken the final senior quarter

B.F.A. MAJOR SEQUENCE

The B.F.A. is a 4-year degree program offering a high concentration of ArtS coursework. It is oriented toward professional work or admission to a Master of Fine Arts program. College of Liberal Arts art majors may apply for the B.F.A. degree after completing the five preparatory courses (see below). To apply, students must submit the B.F.A. application form (available in the Art Advising Office), a current U or M transcript, 3 faculty evaluations, and 8 to 10–35mm color slides of their artwork. Outstanding candidates will be granted B.F.A. degree status based on their academic record (minimum B grade point average in studio arts coursework) and the quality of their artwork as determined by a faculty review committee. B.F.A. candidates must maintain a B average in the major; candidacy is subject to review and dismissal. Upon acceptance, students must discuss and file major programs with the art adviser and the college office. All ArtS and ArTH courses must be taken on the A-F grade system. Grades below C may not be applied to the major requirements.

Preparatory classes to be completed before application to B.F.A.: Introduction to Studio Arts, Drawing, Color, Sculpture or Ceramics, Printmaking or Photography.

Major Requirements:

1xxx level: ArtS 1101, 1301 or 1302, 1401, 1404, 1510 or 1520 or 1530 or 1540, 1701, 1811 or 1812, and 8 cr of electives.

3xxx/5xxx level:

Area concentration: 24 cr (Drawing/Painting, Sculpture, Printmaking, Photography, or Ceramics)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

ArtS electives: 16 cr (may include ArtS 3970 and 5970 Directed Study, and 3980 Directed Instruction)

Required Seminar: ArtS 5400 Concepts in Contemporary Arts

Art History: 16 cr total with a minimum of 8 cr at the 3xxx/5xxx level

Related Artistic Expression: 8 cr from Group D except ArtS and ArtH

Final Quarter Exhibition: B.F.A. solo or group shows may be arranged through the Katherine E. Nash Gallery, the Art Department Gallery, Larson Gallery, or other accessible local galleries.

MINOR SEQUENCE

Required Preparatory Courses:

1401

8 cr 1xxx level studio arts

4 cr Art History

Minor Requirements:

16 cr 3xxx/5xxx level studio arts

You need not be majoring in Art to register for studio arts courses.

RESTRICTIONS IN ART CLASSES

1. Registration in any ArtS class after the first class meeting must be accompanied by the instructor's written permission.

2. Students who do not attend the first class session may lose their place in the course (at the instructor's discretion). A student who cannot attend the first class should call the instructor in advance or call the department at 625-1848 or 625-8096 to make arrangements to hold a place in class. A student who does not make these arrangements and has to cancel the course must obtain a written verification of non-attendance (from the instructor) to be given a tuition refund. This verification must be turned in at 101 Westbrook Hall by the end of the second week of the term.

Most studio courses require the student to spend a minimum of one hour per week in the Art Labs for each hour spent in class.

Because Extension funds its own classes, and since the subject matter of studio courses requires that enrollments be limited to small numbers of students, it has become necessary for Extension Classes to add a \$10 special fee to most classes in order for the classes to be held.

Some studio courses require additional fees which cover part of the cost of expendable materials, models, breakage, and special facilities. Use of a locker for the quarter is included in the course fee for sculpture and ceramics classes.

3. ArtS Labs: open labs have been scheduled to accommodate all 1xxx- and 3xxx-level Extension courses. These labs are staffed with teaching assistants who can answer both aesthetic and technical questions about the course as well as help students with the work in the course. Consult the department's lab schedule which accompanies the Art Student Fact Sheet for days and times. **Attendance at more than one lab is also possible. Attendance at lab strongly encouraged to achieve a passing grade.**

4. Students who wish to audit ArtS courses must have written permission of the instructor and pay the full tuition rate and fees.

Graphic Design/Commercial Art—Graphic Design/Commercial Illustration courses are offered through the Department of Design in this Bulletin.

Art in Greece—Art students can spend spring quarter 1994 studying and earning credit in Greece. For information, call the Global Campus at 625-3379.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in ArtS. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

ArtS 1401 INTRODUCTION TO STUDIO ART. See page 83.

ArtS 1101 BASIC DRAWING. 4 credits, tuition* (includes \$10 special fee and \$20 course fee); Resident \$310; Non-resident \$842.

An introduction to basic drawing elements; exploration of contemporary and traditional methods, various drawing media, work from nature and still life. (No prereq. See **Restrictions**, page 82. Limited to 20)

Fall Qtr, ★Sec 1, M, 6-10, ArtB 140, Caglioti

Fall Qtr, ★Sec 2, M, 6-10, ArtB 150, Rowan

Fall Qtr, ★Sec 3, T, 6-10, ArtB 150

Fall Qtr, ★Sec 4, W, 6-10, ArtB 141, Caglioti

Fall Qtr, ★Sec 5, Th, 6-10, ArtB 150

Fall Qtr, ★Sec 6, Th, 6-10, ArtB 141

Fall Qtr, ★Sec 7, Sa, 8:30 a.m.-12:30, ArtB 160

Winter Qtr, ★Sec 8, M, 6-10, ArtB 140, Caglioti

Winter Qtr, ★Sec 9, T, 6-10, ArtB 150

Winter Qtr, ★Sec 10, W, 6-10, ArtB 140,

Caglioti

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Winter Qtr, ★Sec 11, Th, 6-10, ArtB 150
 Winter Qtr, ★Sec 12, Th, 6-10, ArtB 141
 Winter Qtr, ★Sec 13, Sa, 8:30 a.m.-12:30, ArtB 141
 Spring Qtr, ★Sec 14, M, 6-10, ArtB 140, Caglioti
 Spring Qtr, ★Sec 15, T, 6-10, ArtB 140, Cowette
 Spring Qtr, ★Sec 16, W, 6-10, ArtB 140, Feinberg
 Spring Qtr, ★Sec 17, Th, 6-10, ArtB 150
 Spring Qtr, ★Sec 18, Sa, 8:30 a.m.-12:30, ArtB 140, Cowette
 Spring Qtr, ★Sec 19, Sa, 8:30 a.m.-12:30, ArtB 141, Rowan
 (See also CSch 0174, Creative Drawing)

ArtS 1102 DRAWING. 4 credits, tuition* (includes \$5 special fee and \$20 course fee): Resident \$305; Non-resident \$837.

Work from life and nature. Introduction to pictorial structure. (Prereq 1101. See **Restrictions**, page 82. Limited to 20)

Fall Qtr, ★Sec 1, Sa, 8:30 a.m.-12:30, ArtB 140, Cowette
 Winter Qtr, ★Sec 2, M, 6-10, ArtB 150
 Winter Qtr, ★Sec 3, Sa, 8:30 a.m.-12:30, ArtB 140, Cowette
 Spring Qtr, ★Sec 4, W, 6-10, ArtB 141, Caglioti
 Spring Qtr, ★Sec 5, Th, 6-10, ArtB 141

ArtS 1301 BASIC SCULPTURE. 4 credits, tuition* (includes \$10 special fee and \$65 course fee): Resident \$355; Non-resident \$887.

Beginning course in metal construction; intensive study of structure with emphasis on form and space. Construction in metal. (No prereq. See **Restrictions**, page 82. Limited to 20)

Fall Qtr, ★Sec 1, M, 6-10, ArtB 65, Lucey
 Winter Qtr, ★Sec 2, M, 6-10, ArtB 65, Lucey
 Spring Qtr, ★Sec 3, T, 6-10, ArtB 65, Baldwin

ArtS 1302 BASIC SCULPTURE. 4 credits, tuition* (includes \$10 special fee and \$65 course fee): Resident \$355; Non-resident \$887.

Natural form is studied. Imaginative approaches are encouraged. Construction in clay, plaster, wood. Mold-making and casting. (No prereq. See **Restrictions**, page 82. Limited to 20)

Fall Qtr, ★Sec 1, T, 6-10, ArtB 50, Baldwin
 Winter Qtr, ★Sec 2, T, 6-10, ArtB 50, Baldwin

ArtS 1401 INTRODUCTION TO STUDIO ART. 4 credits, tuition* (includes \$10 special fee and \$15 course fee): Resident \$305; Non-resident \$837.

Introduces the student to the concerns, media, and environment of the practicing artist, and to the concepts of visual art making in its contemporary and historical context. Lectures, demonstrations, and discussions provide a broad aesthetic foundation for entering beginning ArtS courses, and a thorough understanding of the creative process, visual expression, and aesthetic criteria. (No prereq. See **Restrictions**, page 82)

Fall Qtr, Sec 1, Th, 6-10, BlegH 10, Wirth
 Winter Qtr, Sec 2, Th, 6-10, BlegH 10, Wirth
 Spring Qtr, Sec 3, Th, 6-10, BlegH 10, Wirth

ArtS 1404 COLOR. 4 credits, tuition* (includes \$10 special fee and \$20 course fee): Resident \$310; Non-resident \$842.

Introduction to color and pictorial organization. This will provide students with intensive investigation of color and its visual implications. (Prereq 1101. See **Restrictions**, page 82. Limited to 20)

Fall Qtr, ★Sec 1, T, 6-10, ArtB 160
 Fall Qtr, ★Sec 2, W, 6-10, ArtB 160, Bethke
 Fall Qtr, ★Sec 3, Sa, 8:30 a.m.-12:30, ArtB 141, Feinberg
 Winter Qtr, ★Sec 4, T, 6-10, ArtB 160
 Winter Qtr, ★Sec 5, W, 6-10, ArtB 160, Feinberg

Winter Qtr, ★Sec 6, Sa, 8:30 a.m.-12:30, ArtB 160

Spring Qtr, ★Sec 7, W, 6-10, ArtB 160
 Spring Qtr, ★Sec 8, Th, 6-10, ArtB 160
 Spring Qtr, ★Sec 9, Sa, 8:30 a.m.-12:30, ArtB 160

ArtS 1510 PRINTMAKING: INTAGLIO. 4 credits each quarter (maximum 8 cr), tuition* (includes \$10 special fee and \$50 course fee): Resident \$340; Non-resident \$872.

Introduction to various techniques of etching and engraving employed in working on metal plates, as well as collagraphic techniques in creative context. (No prereq. Meets concurrently with 3510, 5510. See **Restrictions**, page 82. Limited to a combined total of 20)

Winter Qtr, ★Sec 1, T, 6-10, ArtB 170

ArtS 1520 PRINTMAKING: LITHOGRAPHY. 4 credits each quarter (maximum 8 cr), tuition* (includes \$10 special fee and \$50 course fee): Resident \$340; Non-resident \$872.

An introduction to planographic printing from stones and plates. Emphasis is directed to the basic techniques of image-making, processing, printing and presentation of prints. (No prereq. Meets concurrently with 3520, 5520. See **Restrictions**, page 82. Limited to a combined total of 20)

Fall Qtr, ★Sec 1, M, 6-10, ArtB 170, Krepps

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Arts 1540 PRINTMAKING: SCREEN. 4 credits each quarter (maximum 8 cr), tuition* (includes \$10 special fee and \$50 course fee): Resident \$340; Non-resident \$872.

Traditional and contemporary screen printing media. Paper stencil, tusche and glue, cut stencil, and photo stencil techniques and their aesthetic applications. (No prereq. Meets concurrently with 3540, 5540. Limited to a combined total of 20)

Spring Qtr, ★Sec 1, Th, 6-10, ArtB 170, Bethke

Arts 1601 VIDEO ARTS PRODUCTION I. 4 credits, tuition* (includes \$5 special fee and \$170 course fee): Resident \$455; Non-resident \$987.

The use of video cameras, microphones, and video recorders, techniques of lighting, sound recording, and editing are explored through lecture, demonstration, and hands-on experience. Work of video artists are viewed and discussed in terms of video theory and technique. Students work in groups to plan, shoot, and edit a short tape. (No prereq. Limited to 15)

Fall Qtr, ★Sec 1, T, 1-5, Intermedia Arts, 425 Ontario, Downing

Fall Qtr, ★Sec 2, W, 6-10, Intermedia Arts, 425 Ontario, Downing

Winter Qtr, ★Sec 3, M, 6-10, Intermedia Arts, 425 Ontario, Rivard

Winter Qtr, ★Sec 4, Th, 1-5, Intermedia Arts, 425 Ontario, Downing

Spring Qtr, ★Sec 5, T, 1-5, Intermedia Arts, 425 Ontario, Downing

Spring Qtr, ★Sec 6, Th, 6-10, Intermedia Arts, 425 Ontario, Downing

Arts 1602 ART AND COMPUTERS I. 4 credits, tuition* (includes \$5 special fee and \$170 course fee): Resident \$455; Non-resident \$987.

A combination lecture and studio course focusing on the creative use of the Amiga. This computer art course will introduce students to the principles and use of computers and various software packages from which they generate images of their own design to be recorded and displayed on videotape. (No prereq. Limited to 15)

Fall Qtr, ★Sec 1 M, 1-5, Intermedia Arts, 425 Ontario, Sandeen

Fall Qtr, ★Sec 2 M, 6-10, Intermedia Arts, 425 Ontario, Sandeen

Fall Qtr, ★Sec 3 Th, 6-10, Intermedia Arts, 425 Ontario, Morse

Winter Qtr, ★Sec 4, M, 6-10, Intermedia Arts, 425 Ontario, Morse

Winter Qtr, ★Sec 5, T, 6-10, Intermedia Arts, 425 Ontario, Morse

Winter Qtr, ★Sec 6, W, 1-5, Intermedia Arts, 425 Ontario, Sandeen

Spring Qtr, ★Sec 7, M, 1-5, Intermedia Arts, 425 Ontario, Sandeen

Spring Qtr, ★Sec 8, W, 6-10, Intermedia Arts, 425 Ontario, Morse

Arts 1603 TWO-DIMENSIONAL COMPUTER GRAPHICS FOR VIDEO. 4 credits, tuition* (includes \$5 special fee and \$170 course fee): Resident \$455; Non-resident \$987.

Introduces basic computer painting skills and a variety of animation techniques transferable to video, as well as features unique to the computer such as pattern generation and digital recreation of photographic images. Students will complete an animated work. (No prereq. Limited to 15)

Fall Qtr, ★Sec 1, T, 6-10, Intermedia Arts, 425 Ontario, Charles

Winter Qtr, ★Sec 2, Th, 6-10, Intermedia Arts, 425 Ontario, Charles

Spring Qtr, ★Sec 3, T, 6-10, Intermedia Arts, 425 Ontario, Charles

Arts 1606 INTRODUCTION TO SOUND. 4 credits, tuition* (includes \$5 special fee and \$170 course fee): Resident \$455; Non-resident \$987.

Covers basics of sound and audio recording from a theoretical and practical approach with an emphasis on developing an awareness of sound qualities and a facility for creative use of sound. Acoustic and electronic sound synthesis will be explored as material used in conjunction with video images and other time arts media or for its own expressive potential. No knowledge of music or sound recording is required. (No prereq. Limited to 15)

Fall Qtr, ★Sec 1, T, 6-10, Intermedia Arts, 425 Ontario, Maye

Winter Qtr, ★Sec 2, M, 6-10, Intermedia Arts, 425 Ontario, Maye

Spring Qtr, ★Sec 3, Th, 1-5, Intermedia Arts, 425 Ontario, Maye

Arts 1611 INTRODUCTION TO ELECTRONIC ARTS. 4 credits, tuition* (includes \$5 special fee and \$30 course fee): Resident \$315; Non-resident \$847.

An introductory-level course in the theory, aesthetics, history, and philosophy of the electronic arts. Computer graphics, video, electronic sound, lasers, interactive, installation, and performance will be examined. This course will trace the current trends in the media arts from analog to digital information storage technology, and the central role played by computers in the field of electronic arts. (No prereq. Limited to 20)

Spring Qtr, ★Sec 1, W, 1-5, Intermedia Arts, 425 Ontario

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Arts 1701 INTRODUCTION TO PHOTO MEDIUM. 4 credits, tuition* (includes \$10 special fee and \$40 course fee): Resident \$330; Non-resident \$862.

A course in black and white photography for beginners with little or no experience. Lectures on contemporary and historical use of photography. The course will cover techniques in the use of the camera, film development and enlargements. Emphasis on the creative process. Student must have camera. Any 35mm camera with adjustable F stops and shutter speeds is acceptable. If you wish to use a camera other than 35mm and are uncertain whether it will be acceptable, you may check with the Studio Arts department, 625-9532. **Additional materials for the course may cost \$75-\$125.** (No prereq. See **Restrictions**, page 82. Limited to 20).

Fall Qtr, ★Sec 1, M, 1-4:45, MacP Bsmt, Husom (Limit 24)

Fall Qtr, ★Sec 2, T, 6-10, ArtB 120

Fall Qtr, ★Sec 3, T, 1-4:45, MacP Bsmt (Limit 24)

Fall Qtr, ★Sec 4, W, 6-10, ArtB 120

Winter Qtr, ★Sec 5, M, 6-10, ArtB 120

Winter Qtr, ★Sec 6, M, 1-4:45, MacP Bsmt, Husom (Limit 24)

Winter Qtr, ★Sec 7, T, 6-10, ArtB 120

Spring Qtr, ★Sec 8, M, 6-10, ArtB 120

Spring Qtr, ★Sec 9, M, 1-4:45, MacP Bsmt, Husom (Limit 24)

Spring Qtr, ★Sec 10, T, 9 a.m.-12:45, MacP Bsmt, Husom (Limit 24)

Spring Qtr, ★Sec 11, T, 6-10, ArtB 120

(See also photography courses in General College; and The Compleat Scholar noncredit courses on page 378)

Arts 1811 CERAMICS. 4 credits, tuition* (includes \$10 special fee and \$65 course fee): Resident \$355; Non-resident \$887.

Introduction to handbuilding techniques in clay for individual creative expression. (No prereq. See **Restrictions**, page 82. Limited to 20)

Fall Qtr, ★Sec 1, T, 6-10, ArtB 10, Lane

Winter Qtr, ★Sec 2, M, 6-10, ArtB 10, Hoard

Spring Qtr, ★Sec 3, Th, 6-10, ArtB 10, Pharis

Arts 1812 CERAMICS. 4 credits, tuition* plus \$10 special fee and \$65 course fee. Total: Resident \$355; Non-resident \$887.

Introduction to wheel throwing techniques. (No prereq. See **Restrictions**, page 82. Limited to 20)

Fall Qtr, ★Sec 1, M, 6-10, ArtB 10, Hoard

Fall Qtr, ★Sec 2, Th, 6-10, ArtB 10, Pharis

Winter Qtr, ★Sec 3, T, 6-10, ArtB 10, Lane

Spring Qtr, ★Sec 4, M, 6-10, ArtB 10, Hoard

Arts 3105 (formerly 1105) PAINTING. 4 credits, tuition* (includes \$10 special fee and \$15 course fee): Resident \$319; Non-resident \$877.60.

Introduction to studio work in painting explores the fundamentals of visual art making via the paint media. Emphasis is on the visual language: volume, texture, color, line, space, light, compositions. Proper attention will focus on concepts and technique and philosophies of painting. (Prereq 1401, 1101, 1404 or #. Limited to 20)

Fall Qtr, ★Sec 1, W, 6-10, ArtB 151, Feinberg

Winter Qtr, ★Sec 2, Th, 6-10, ArtB 151

Spring Qtr, ★Sec 3, M, 6-10, ArtB 151

Arts 3110 DRAWING. 4 credits each quarter (maximum 12 cr), tuition* (includes \$10 special fee and \$15 course fee): Resident \$319; Non-resident \$877.60.

Elements of drawing from the nude model, still life, and nature. (Prereq 1401, 1102. See **Restrictions**, page 82. Meets concurrently with 5110. Limited to a combined total of 20)

Fall Qtr, ★Sec 1 Th, 6-10, ArtB 140

Winter Qtr, ★Sec 2 T, 6-10, ArtB 141

Spring Qtr, ★Sec 3 T, 6-10, ArtB 141, Rowan

Arts 3120 PAINTING. 4 credits each quarter (maximum 12 cr), tuition* (includes \$10 special fee and \$15 course fee): Resident \$319; Non-resident \$877.60.

Continuation of media development and individual problems. (Prereq 1404, 3105, and 3 cr of 3110, 1401 or #. See **Restrictions**, page 82. Meets concurrently with 5120. Limited to a combined total of 20)

Fall Qtr, ★Sec 1, T, 6-10, ArtB 151, Caglioti

Winter Qtr, ★Sec 2, Sa, 8:30 a.m.-12:30, ArtB 151, Feinberg

Spring Qtr, ★Sec 3, Th, 6-10, ArtB 151

Arts 3130 WATERCOLOR. 4 credits each quarter (maximum 12 cr), tuition* (includes \$10 special fee and \$15 course fee): Resident \$319; Non-resident \$877.60.

Introduction to transparent watercolor, gouache, casein, and tempera. Figure, still life, landscape, and individual directions. (Prereq 1101, 1102, 1404, 1401 or #. Meets concurrently with 5130. See **Restrictions**, page 82. Limited to a combined total of 20)

Fall Qtr, ★Sec 1, M, 6-10, ArtB 141, Myers

Winter Qtr, ★Sec 2, M, 6-10, ArtB 141, Myers

Spring Qtr, ★Sec 3, M, 6-10, ArtB 141, Myers

(See also CSch 0172, Painting in Watercolor)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

ArtS 3303 SCULPTURE: CAST METAL. 4 credits, tuition* (includes \$10 special fee and \$65 course fee): Resident \$369; Non-resident \$927.60. Lost wax and sand casting in bronze, aluminum, iron. (Prereq 1301, 1302, 1401. Meets concurrently with 5330. See **Restrictions**, page 82. Limited to a combined total of 20)

Fall Qtr, ★Sec 1, T, 6-10, ArtB 185, Potratz
Winter Qtr, ★Sec 2, T, 6-10, ArtB 185, Dashke

ArtS 3306 PERFORMANCE ART. 4 credits, tuition* (includes \$10 special fee and \$50 course fee): Resident \$354; Non-resident \$912.60.

Development of individual performance artworks and research pioneers of this art form. (No prereq. Meets concurrently with 5360. Limited to a combined total of 20)

Spring Qtr, ★Sec 1, M, 6-10, ArtB 65, Lucey

ArtS 3420 WORKSHOP: ARTISTS' BOOKS: From Structure to Content. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Interdisciplinary exploration of art in the book form, ranging from one-of-a-kind books to multiples and sculptural works. Covers the visual language of page design, the technical aspects of book structures, and extends into making books as art objects in a variety of mediums. Concepts include image/text relationships, rhythm and sequence, and narrative structure. **Note:** A materials fee will be collected by the instructor. (No prereq. Meets concurrently with 5420 sec 1, 2. Limited to a combined total of 15)

Fall Qtr, ★Sec 1, W, 6-10, ArtB 150, Wirth
Spring Qtr, ★Sec 2, W, 6-10, ArtB 150, Wirth

ArtS 3420 WOMEN'S IMAGES AND IMAGES OF WOMEN: WOMEN ARTISTS, 1650-1965. 4 credits, tuition* (includes \$15 course fee): Resident \$309; Non-resident \$867.60.

Explores women's place in art from several perspectives: women as artists and the imagery they have created, and women as the subject of imagery and the attitudes that imagery conveys. The works of women masters throughout history such as Artemisia Gentileschi and Elisabeth Vigee-Le Brun, as well as more recent women artists such as Mary Cassatt, Georgia O'Keeffe, and Helen Frankenthaler will be presented. Examines and discusses how women have been portrayed as the subject of imagery. The concepts of the temptress and the "Fallen Woman" implicit in much 19th-century art is explored. From this perspective, the course re-examines works by famous artists including Ingres's harem scenes, Corbet's nudes, and Manet's Luncheon on the Grass and Olympia. (No prereq. Meets concurrently with 5420 sec 3. Limited to a combined total of 40)

Winter Qtr, ★Sec 3, M, 6-10, JonesH 207B,
Soderman-Olson

ArtS 3420 WORKSHOP: DIGITAL IMAGING. 4 credits, tuition* (includes \$30 special fee and \$25 course fee): Resident \$349; Non-resident \$907.60.

Explores digital imaging using high-end Dicommed workstations and personal computers. Students learn how to use sophisticated equipment to input, manipulate, and output images. The emphasis of the course is on producing photographic images that can be viewed, evaluated, and critiqued. (Prereq 1701 or #. Limited to 12)

Winter Qtr, ★Sec 4, M, 6-10, Arr, Husom

ArtS 3420 WOMEN'S IMAGES AND IMAGES OF WOMEN: CONTEMPORARY WOMEN ARTISTS FROM THE 1960s TO THE PRESENT. 4 credits, tuition* (includes \$15 course fee): Resident \$309; Non-resident \$867.60.

Presents women artists' work from the early Feminist era of the late 1960s, such as that of Eva Hesse, Judy Chicago, and Ree Morton, to the work of current artists such as Jenny Holzer, Barbara Kruger, and Laurie Anderson. This course explores contemporary issues related to art work by women including the engagement of personal identity and experiences, the questioning, confrontation, and re-presentation of economic, social, and cultural codes, the development of collective political activism, and the use of alternative media and techniques. (No prereq. Meets concurrently with 5420 sec 4. Limited to a combined total of 40)

Spring Qtr, ★Sec 5, M, 6-10, JonesH 207B,
Soderman-Olson

ArtS 3420 WORKSHOP: PAINTED SCULPTURE. 4 credits, tuition* (includes \$10 special fee and \$15 course fee): Resident \$319; Non-resident \$877.60.

Concepts of the interdependency of 2- and 3-dimensional form combined with a work of art. Camouflage, illusion, and the sensation of deep space will be presented in various assignments. (Prereq one lxxx-level Studio Arts course. Meets concurrently with 5420 sec 5. Limited to a combined total of 20)

Spring Qtr, ★Sec 6, Sa, 8:30 a.m.-12:30, ArtB
151, Feinberg

ArtS 3430 PAPER: PULP TO PLASTIC EXPRESSION. 4 credits (maximum 12 cr), tuition* (includes \$10 special fee and \$45 course fee): Resident \$349; Non-resident \$907.60.

Creative and traditional approaches to papermaking. Course will focus on the role of paper with regard to the total expression of an art work, and the relationship of materials and preparation that lends uniqueness to handmade papers. (Prereq 1401, lxxx-level ArtS course. Meets concurrently with 5430. See **Restrictions**, page 82. Limited to a combined total of 14)

Spring Qtr, ★Sec 1, M, 6-10, ArtB 35, Krepps

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

ArtS 3510 PRINTMAKING: INTAGLIO. 4 credits each quarter (maximum 12 cr), tuition* (includes \$10 special fee and \$55 course fee): Resident \$359; Non-resident \$917.60.

A print class for students who have had experience in drawing composition. All techniques of fine printing will be taught and color printing will be demonstrated in engraving and etching. (Prereq 1401, 3 cr of 1510 or #. Meets concurrently with 1510, 5510. See **Restrictions**, page 82. Limited to a combined total of 20) Winter Qtr, ★Sec 1, T, 6-10, ArtB 170

ArtS 3520 PRINTMAKING: INTERMEDIATE LITHOGRAPHY. 4 credits each quarter (maximum 12 cr), tuition* (includes \$10 special fee and \$55 course fee): Resident \$359; Non-resident \$917.60.

Further exploration of fundamental techniques with introduction to color printing. Emphasis is directed to a more independent approach, stressing artistic considerations, in terms of materials and the visual manifestation of a statement. (Prereq 1401, 3 cr of 1520 or #. Meets concurrently with 1520, 5520. See **Restrictions**, page 82. Limited to a combined total of 20) Fall Qtr, ★Sec 1, M, 6-10, ArtB 170, Krepps

ArtS 3540 PRINTMAKING: SCREEN. 4 credits each quarter (maximum 12 cr), tuition* each quarter (includes \$10 special fee and \$55 course fee): Resident \$359; Non-resident \$917.60.

Further exploration of screen printing techniques, emphasis on color and image development. (Prereq 1401, 4 cr of 1540 or #. Meets concurrently with 1540 and 5540. Limited to a combined total of 20) Spring Qtr, ★Sec 1, Th, 6-10, ArtB 170, Bethke

ArtS 3601 VIDEO ARTS PRODUCTION II. 4 credits, tuition* (includes \$5 special fee and \$170 course fee): Resident \$469; Non-resident \$1027.60.

Building on skills learned in ArtS 1601 students will develop conceptual skills involved in video production. Areas covered will include scripting, storyboarding, budgeting, and other preproduction concerns; advanced camera and lighting techniques, editing with emphasis on the creative process, video processing, and monitoring equipment. Students will complete a final project individually or with a group. (Prereq 1601. Limited to 15)

Fall Qtr, ★Sec 1, M, 6-10, Intermedia Arts, 425 Ontario, Rivard

Winter Qtr, ★Sec 2, T, 6-10, Intermedia Arts, 425 Ontario, Rivard

Spring Qtr, ★Sec 3, T, 6-10, Intermedia Arts, 425 Ontario, Rivard

ArtS 3602 ART AND COMPUTERS II. 4 credits, tuition* (includes \$5 special fee and \$170

course fee): Resident \$469; Non-resident \$1027.60. Continuation and development of methods and concepts introduced in ArtS 1602. Using the Amiga. Techniques will be refined with an emphasis on producing a final project with computer graphics and animation. (Prereq 1602. Limited to 15)

Winter Qtr, ★Sec 1, M, 6-10, Intermedia Arts, 425 Ontario, Sandeen

Spring Qtr, ★Sec 2, M, 6-10, Intermedia Arts, 425 Ontario, Sandeen

ArtS 3604 INTERDISCIPLINARY PROJECTS. 4 credits, tuition* (includes \$5 special fee and \$170 course fee): Resident \$469; Non-resident \$1027.60.

Examines alternative approaches to the creation of works using any combination of the electronic arts—video, computers, audio, projected light—with possible interface with other art forms—theatre, dance, painting, sculpture. The course stresses conceptual concerns and experimentation with numerous ways of creating and manipulating images and sounds. Students will complete several group or individual projects. (Prereq 3601 or 3602 or 3603, or #. Meets concurrently with 5640. Limited to a combined total of 15)

Spring Qtr, ★Sec 1, Th, 6-10, Intermedia Arts, 425 Ontario

ArtS 3615 VIDEO EDITING. 4 credits, tuition* (includes \$5 special fee and \$170 course fee): Resident \$469; Non-resident \$1027.60.

This class will develop technical and artistic skills used in video editing. Work from a number of genres will be studied to familiarize students with the range of editing styles, strategies, and technology used. In addition to a number of editing exercises, students' work-in-progress will be critiqued with suggestions made for improving the work in the editing process. (Prereq 1601. Limited to 15)

Winter Qtr, ★Sec 1, Th, 6-10, Intermedia Arts, 425 Ontario, Downing

Spring Qtr, ★Sec 2, W, 6-10, Intermedia Arts, 425 Ontario, Downing

ArtS 3655 VIDEO AS AN ART FORM. 4 credits, tuition* (includes \$5 special fee and \$45 course fee): Resident \$344; Non-resident \$902.60.

Explores the variety of video genres (including performance, installation, conceptual, documentary, and expressive) from a number of critical positions, and examines the relationship of these genres to politics and the arts. There will be viewings and discussion of significant video work and readings from prominent theorists, critics, and artists. (No prereq. Meets concurrently with ArtH 3940 sec 1 and ArtH 5940 sec 1. Limited to a combined total of 25)

Winter Qtr, ★Sec 1, W, 6-10, Walker Art Center Lecture Room, Jenkins

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

ArtS 3710 INTERMEDIATE PHOTOGRAPHY. 4 credits each quarter (maximum 12 cr), tuition* (includes \$10 special fee and \$40 course fee): Resident \$344; Non-resident \$902.60.

Continued work in photographic controls and processes. Introduction to related photosensitive media. Emphasis on creative process with attention to individual interests and requirements. Emphasis Sec 1: The fine print. Emphasis Sec 2: The extended image. Emphasis Sec 3: Contemporary topics in photography. **Additional materials for the course may cost \$75-\$125.** (Prereq 1401, 1701 or #. See **Restrictions**, page 82. Limited to 20)

Fall Qtr, ★Sec 1, M, 6-10, ArtB 120

Winter Qtr, ★Sec 2, T, 9 a.m.-12:45, MacP Bsm, Husom (Limit 24)

Winter Qtr, ★Sec 3, W, 6-10, ArtB 120

Spring Qtr, ★Sec 4, M, 6-9:45, MacP Bsm (Limit 24)

Spring Qtr, ★Sec 5, W, 6-10, ArtB 120
(Concurrent with 5710 and limited to a combined total of 20)

(See also photography courses in General College; and The Compleat Scholar noncredit courses on page 378)

ArtS 3810 CERAMIC DESIGN. 4 credits each quarter (maximum 12 cr), tuition* (includes \$10 special fee and \$75 course fee): Resident \$379; Non-resident \$937.60.

Greater emphasis on wheel throwing. Advanced design problems and introduction to glaze and clay experimentation. Emphasis on development of personal expression in ceramic medium. (Prereq 1401, 1811, 1812 or #. See **Restrictions**, page 82. Sec 1 meets concurrently with 5810. Limited to a combined total of 20)

Winter Qtr, ★Sec 1, Th, 6-10, ArtB 10, Pharis

Spring Qtr, ★Sec 2, T, 6-10, ArtB 10, Lane

ArtS 5110 ADVANCED DRAWING. 4 credits each quarter (maximum 16 cr), tuition* (includes \$10 special fee and \$15 course fee): Resident \$319; Non-resident \$877.60; Resident Graduate credit \$421; Non-resident Graduate credit \$817; Resident Graduate School credit \$709; Non-resident Graduate School credit \$1393.

Drawing in all mediums from life and from imagination; history of drawing. (Prereq 12 cr of 3110 or #. Meets concurrently with 3110. See **Restrictions**, page 82. Qualified students may register in Sec 3 only for graduate credit at the University of Minnesota. Sec 1 and 2 may not be taken for graduate credit at the University of Minnesota. Limited to a combined total of 20)

Fall Qtr, ★Sec 1, Th, 6-10, ArtB 140

Winter Qtr, ★Sec 2, T, 6-10, Art 141

Spring Qtr, ★Sec 3, T, 6-10, ArtB 141, Rowan

ArtS 5120 PROBLEMS IN PAINTING. 4 credits each quarter (maximum 16 cr), tuition* (includes \$10 special fee and \$15 course fee): Resident \$319; Non-resident \$877.60; Resident Graduate credit \$421; Non-resident Graduate credit \$817; Resident Graduate School credit \$709; Non-resident Graduate School credit \$1393.

An advanced course in acrylic and oil painting with emphasis on individual directions as they reflect current and traditional trends in art. (Prereq 12 cr of 3120 or #. See **Restrictions**, page 82. Meets concurrently with 3120. Qualified students may register in Sec 1 and 2 only for graduate credit at the University of Minnesota. Sec 3 may not be taken for graduate credit at the University of Minnesota. Limited to a combined total of 20)

Fall Qtr, ★Sec 1, T, 6-10, ArtB 151, Caglioti

Winter Qtr, ★Sec 2, Sa, 8:30 a.m.-12:30, ArtB 151, Feinberg

Spring Qtr, ★Sec 3, Th, 6-10, ArtB 151

ArtS 5130 WATERCOLOR. 4 credits each quarter (maximum 16 cr), tuition* (includes \$10 special fee and \$15 course fee): Resident \$319; Non-resident \$877.60.

Advanced watercolor techniques, aesthetic direction. Continued development of concepts and individual direction. (Prereq 12 cr of 3160 or #. Meets concurrently with 3130. See **Restrictions**, page 82. May not be taken for graduate credit. Limited to a combined total of 20)

Fall Qtr, ★Sec 1 M—6-10, ArtB 141, Myers

Winter Qtr, ★Sec 2 M—6-10, ArtB 141, Myers

Spring Qtr, ★Sec 3 M—6-10, ArtB 141, Myers

ArtS 5330 SCULPTURE: CAST METAL. 4 credits each quarter (maximum 16 cr), tuition* (includes \$10 special fee and \$65 course fee): Resident \$369; Non-resident \$927.60; Resident Graduate credit \$471; Non-resident Graduate credit \$867; Resident Graduate School credit \$759; Non-resident Graduate School credit \$1443.

See description for 3303. (Prereq 3303. Meets concurrently with 3303. See **Restrictions**, page 82. Qualified students may register in Sec 1 only for graduate credit at the University of Minnesota; Sec 2 may not be taken for graduate credit at the University of Minnesota. Limited to a combined total of 20)

Fall Qtr, ★Sec 1, T, 6-10, ArtB 185, Potratz

Winter Qtr, ★Sec 2, T, 6-10, ArtB 185, Dashke

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

ArtS 5360 PERFORMANCE ART. 4 credits (maximum 16 cr), tuition* plus \$10 special fee and \$50 course fee. Total: Resident \$354; Non-resident \$912.60; Resident Graduate credit \$456; Non-resident Graduate credit \$852; Resident Graduate School credit \$744; Non-resident Graduate School credit \$1428. See course description for ArtS 3306. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3306. Limited to a combined total of 20)

Spring Qtr, ★Sec 1, M, 6-10, ArtB 65, Lucey

ArtS 5420 WORKSHOP: ARTISTS' BOOKS: From Structure to Content. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See ArtS 3420 for description. *Note: A materials fee will be collected by the instructor.* (No prereq. Qualified students wishing to register for graduate credit at the University of Minnesota should check with the Art Department prior to registering. Meets concurrently with 3420 sec 1, 2. Limited to a combined total of 15)

Fall Qtr, ★Sec 1, W, 6-10, ArtB 150, Wirth

Spring Qtr, ★Sec 2, W, 6-10, ArtB 150, Wirth

ArtS 5420 WOMEN'S IMAGES AND IMAGES OF WOMEN: WOMEN ARTISTS, 1650-1965. 4 credits, tuition* (includes \$35 special fee and \$15 course fee): Resident \$344; Non-resident \$902.60; Resident Graduate credit \$446; Non-resident Graduate credit \$842; Resident Graduate School credit \$734; Non-resident Graduate School credit \$1418.

See course description for 3420 sec 1. (No prereq. May not be taken for graduate credit. Meets concurrently with 3420 sec 3. Limited to a combined total of 40)

Winter Qtr, ★Sec 3, M, 6-10, JonesH 207B, Soderman-Olson

ArtS 5420 WOMEN'S IMAGES AND IMAGES OF WOMEN: CONTEMPORARY WOMEN ARTISTS FROM THE 1960s TO THE PRESENT. 4 credits, tuition* (includes \$15 course fee): Resident \$309; Non-resident \$867.60; Resident Graduate credit \$411; Non-resident Graduate credit \$807; Resident Graduate School credit \$699; Non-resident Graduate School credit \$1383.

See course description for 3420 sec 3. (No prereq. May not be taken for graduate credit. Meets concurrently with 3420 sec 5. Limited to a combined total of 40)

Spring Qtr, ★Sec 4, M, 6-10, JonesH 207B, Soderman-Olson

ArtS 5420 WORKSHOP: PAINTED SCULPTURE. 4 credits, tuition* (includes \$10 special fee and \$15 course fee): Resident \$319; Non-resident

\$877.60; Resident Graduate credit \$421; Non-resident Graduate credit \$817; Resident Graduate School credit \$709; Non-resident Graduate School credit \$1393.

See course description for ArtS 3420. (Prereq one 1xxx-level Studio Arts course. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3420 sec 6. Limited to a combined total of 20)

Spring Qtr, ★Sec 5, Sa, 8:30 a.m.-12:30, ArtB 151, Feinberg

ArtS 5430 PAPER: PULP TO PLASTIC EXPRESSION. 4 credits each quarter (maximum 16 cr), tuition* (includes \$10 special fee and \$45 course fee): Resident \$349; Non-resident \$907.60; Resident Graduate credit \$451; Non-resident Graduate credit \$847; Resident Graduate School credit \$739; Non-resident Graduate School credit \$1423.

See course description for ArtS 3430. (Prereq 12 cr of 3430 or #. Meets concurrently with 3430. See **Restrictions**, page 82. Qualified students may register for graduate credit at the University of Minnesota. Limited to a combined total of 14)

Spring Qtr, ★Sec 1, M, 6-10, ArtB 35, Krepps

ArtS 5510 PRINTMAKING: ADVANCED INTAGLIO. 4 credits each quarter (maximum 16 cr), tuition* (includes \$10 special fee and \$55 course fee): Resident \$369; Non-resident \$927.60; Resident Graduate credit \$471; Non-resident Graduate credit \$867; Resident Graduate School credit \$759; Non-resident Graduate School credit \$1443.

An advanced course in etching, aquatint, meHatint, and all related techniques in the execution of intaglio prints. Color printing will be taught in conjunction with the above material. (Prereq 12 cr of 3510 or #. Meets concurrently with 1510, 3510. See **Restrictions**, page 82. May not be taken for graduate credit. Limited to a combined total of 20)

Winter Qtr, ★Sec 1, T, 6-10, ArtB 170

ArtS 5520 PRINTMAKING: ADVANCED LITHOGRAPHY. 4 credits each quarter (maximum 16 cr), tuition* (includes \$10 special fee and \$55 course fee): Resident \$359; Non-resident \$917.60; Resident Graduate credit \$461; Non-resident Graduate credit \$857; Resident Graduate School credit \$749; Non-resident Graduate School credit \$1433.

Strong emphasis in creative and individual approach to lithography. Critiques and discussions are directed to understanding the intrinsic qualities of the lithographic medium. (Prereq 12 cr of 3520 or #. Meets concurrently with 1520, 3520. See **Restrictions**, page 82. Qualified students may register for graduate credit at the University of Minnesota. Limited to a combined total of 20)

Fall Qtr, ★Sec 1, M, 6-10, ArtB 170, Krepps

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Arts 5540 PRINTMAKING: SCREEN. 4 credits each quarter (maximum 16 cr), tuition* (includes \$10 special fee and \$55 course fee): Resident \$359; Non-resident \$917.60; Resident Graduate credit \$461; Non-resident Graduate credit \$857; Resident Graduate School credit \$749; Non-resident Graduate School credit \$1433.

Screen processes and combined techniques. (Prereq 12 cr of 3540 or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 1540, 3540. Limited to a combined total of 20)

Spring Qtr, ★Sec 1, Th, 6-10, ArtB 170, Bethke

Arts 5601 VIDEO ARTS PRODUCTION III. 4 credits, tuition* (includes \$15 special fee and \$170 course fee): Resident \$479; Non-resident \$1037.60.

Building on skills learned in 1601 and 3615, students engage in a number of exercises intended to increase students' facility and introduce more complex aspects of the medium. Editing strategies, experimental use of equipment, and interactive aspects of the medium will be explored as well as the issues related to the development and criticism of experimental works. (Prereq 3601 and 3615. May not be taken for graduate credit. Limited to 15)

Fall Qtr, ★Sec 1, T, 6-10, Intermedia Arts, 425 Ontario, Rivard

Spring Qtr, ★Sec 2, M, 6-10, Intermedia Arts, 425 Ontario, Rivard

Arts 5640 INTERDISCIPLINARY ELECTRONICS PROJECTS. 4 credits each quarter (maximum 16 credits), tuition* (includes \$5 special fee and \$170 course fee): Resident \$469; Non-resident \$1027.60.

This advanced-level course is open to students who have completed course work in video, computer graphics, and sound and want to pursue further study through individually designed projects. Projects will be designed in consultation with the faculty member and completed by quarter's end. Aesthetic and technical assistance will be provided during the class period through weekly project reports and critique sessions. (Prereq 3604 or #. May not be taken for graduate credit. Meets concurrently with 3604. Limited to a combined total of 15)

Spring Qtr, ★Sec 1, Th, 6-10, Intermedia Arts, 425 Ontario

Arts 5710 PHOTOGRAPHY. 4 credits each quarter (maximum 16 cr), tuition* (includes \$10 special fee and \$40 course fee): Resident \$344; Non-resident \$902.60.

Individual work in photographic controls, processes; related photosensitive media. **Additional materials for the course may cost \$75-\$125.** (Prereq 12 cr of

3710 or #. See **Restrictions**, page 82. May not be taken for graduate credit. Meets concurrently with 3710 sec 5. Limited to a combined total of 20)
Spring Qtr, ★Sec 1, W, 6-10, ArtB 120

Astronomy (Ast)

(356 Physics: 624-0211)

Institute of Technology

Textbooks for most Ast courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also General College courses in natural science)

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Ast. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Astronomy deals with the study of all constituents of the universe and of the laws which govern the formation, composition, and evolution of these constituents.

Astronomy 1011 and 1015 together satisfy the CLA laboratory science requirement. Students may take Ast 1015 at any time during or after they have taken Ast 1011.

Ast 1011 DESCRIPTIVE ASTRONOMY. 4 credits, §1021, §1008, 1009, tuition*: Resident \$280; Non-resident \$812.

The sun, the moon, the planets, and their relationships; stars, galaxies, cosmology, and the physical universe. Some math at the level of algebra and trigonometry will be used. (No prereq. A joint Day/Extension class)

Fall Qtr, ○Sec 1, MW, 6:30-8:10, Phys 150

Winter Qtr, ○Sec 2, MW, 6:30-8:10, Phys 166

Spring Qtr, ○Sec 3, MW, 6:30-8:10, Phys 150

Ast 1015 DESCRIPTIVE ASTRONOMY LABORATORY. 1 credit, §1025H, tuition*: Resident \$70; Non-resident \$203.

Laboratory offered in conjunction with 1011. Opportunity to observe with telescope. *No registrations allowed after the first class meeting.* Honors sections of Astronomy Laboratory are now available to Extension students. For more information, contact the Astronomy department at 624-0211. (Prereq high school algebra; high school trigonometry recommended. A joint Day/Extension class limited to 15 Extension students)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Fall Qtr, ★○Sec 1, M, 6:15-8, Phys 450
 Fall Qtr, ★○Sec 2, M, 8:15-10, Phys 450
 Fall Qtr, ★○Sec 3, T, 6:15-8, Phys 450
 Fall Qtr, ★○Sec 4, W, 5:15-7, Phys 450
 Fall Qtr, ★○Sec 5, W, 8:15-10, Phys 450
 Fall Qtr, ★○Sec 6, Th, 5:15-7, Phys 450
 Winter Qtr, ★○Sec 7, M, 6:15-8, Phys 450
 Winter Qtr, ★○Sec 8, M, 8:15-10, Phys 450
 Winter Qtr, ★○Sec 9, T, 6:15-8, Phys 450
 Winter Qtr, ★○Sec 10, W, 5:15-7, Phys 450
 Winter Qtr, ★○Sec 11, W, 8:15-10, Phys 450
 Winter Qtr, ★○Sec 12, Th, 5:15-7, Phys 450
 Spring Qtr, ★○Sec 13, M, 6:15-8, Phys 450
 Spring Qtr, ★○Sec 14, M, 8:15-10, Phys 450
 Spring Qtr, ★○Sec 15, T, 6:15-8, Phys 450
 Spring Qtr, ★○Sec 16, W, 5:15-7, Phys 450
 Spring Qtr, ★○Sec 17, W, 8:15-10, Phys 450
 Spring Qtr, ★○Sec 18, Th, 5:15-7, Phys 450

Minnesota Starwatch—a taped message on the night sky in Minnesota, prepared by the Astronomy Department at the University, can be reached by calling 624-2001.

Biochemistry (BioC)

(140 Gortner Laboratory: 624-7755)

College of Biological Sciences

Textbooks for most BioC courses are available at Books Underground on the St. Paul campus (624-9200).

(See also Biology)

Bianca M. Conti-Tronconi, Professor

Michael A. Raftery, Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Biochemistry. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

BioC 3021 (formerly Biol 5001) BIOCHEMISTRY. 4 credits, §Biol 5001, tuition*: Resident \$330; Non-resident \$957.

Biochemistry and biophysics of cells; emphasis on enzyme catalysis, cellular energetics, biosynthesis of cellular constituents and cellular regulatory mechanisms. (Prereq 1009, 12 or organic chemistry, or #. A joint Day/Extension class)

Winter Qtr, ○Sec 1, MW, 5:30-7:10, BioSci 70, StP Campus, Raftery

BioC 5025 LABORATORY IN BIOCHEMISTRY. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Discussions of techniques and problem-solving approaches illustrated with laboratory experiments and demonstrations. (Prereq Biol 5001 or ¶BioC 3021 or BioC 3031 with grade of B or better. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★○Sec 1, T, 5:30-10, BioSci 70, StP Campus, Conti-Tronconi

Biological Sciences

Please see the following alphabetical listings for departments and related course offerings:

- Animal Science
- Biochemistry
- Biology
- Cell Biology and Neuroanatomy
- Chemistry
- Clinical Laboratory Science
- Ecology, Evolution, and Behavior
- General College
- Genetics and Cell Biology
- Health Sciences
- History of Science and Technology
- Interdepartmental Study
- Microbiology
- Nursing
- Pharmacy
- Plant Biology
- Public Health

Also see Interdepartmental Study courses, page 244.

Biology (Biol)

(223 Snyder Hall: 624-9717)

College of Biological Sciences

Textbooks for Biol courses are available at the Minnesota Book Center in Williamson Hall for Minneapolis campus classes (625-6000) and at Books Underground for St. Paul campus classes (624-9200).

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

(See also General College courses in natural science; Biochemistry; Ecology, Evolution, and Behavior; Genetics and Cell Biology; Microbiology; Plant Biology; Interdepartmental Study; Compleat Scholar noncredit courses in Natural and Physical Sciences; and WoSt 3202, Biology of Women)

David Biesboer, Associate Professor
William P. Cunningham, Professor
Alan B. Hooper, Professor of Genetics and Cell Biology
Norman S. Kerr, Professor
Willard L. Koukkari, Professor
Robert G. McKinnell, Professor
Michael A. Raftery, Professor
D. Peter Snustad, Professor

Degree Program in Biology—It is possible to complete the majority of the course requirements for a Bachelor of Arts or Bachelor of Science degree in Biology through Extension. These requirements include the necessary courses in chemistry, mathematics, physics, composition, foreign languages, and liberal education. In addition, several of the required core courses in Biology are regularly scheduled in Extension. All such CEE courses are acceptable to the Biology degree program.

Students interested in pursuing a degree in Biology through Extension are strongly encouraged to discuss their interests with an adviser in the College of Biological Sciences Student Services Office, 624-9717. Advisers are prepared to discuss degree program planning as well as course selection options.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Biology. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Biol 1009 GENERAL BIOLOGY. 5 credits, tuition* (includes \$10 course fee): Resident \$360; Non-resident \$1025. (IS)

An introduction to the principles of biology. The cell, metabolism, heredity, reproduction, ecology and evolution. (No prereq. A joint Day/Extension class. Each section limited to 24 Extension students)

Fall Qtr, ★●Sec 1, Lect TTh, 6-7:15, MoosT 2-650; Lab TTh, 7:30-9:15, KoltH S167

Fall Qtr, ★●Sec 2, Lect TTh, 6-7:15, MoosT 2-650; Lab TTh, 7:30-9:15, KoltH S170

Fall Qtr, ★●Sec 3, Lect TTh, 6-7:15, MoosT 2-650; Lab TTh, 7:30-9:15, KoltH S177

Spring Qtr, ★●Sec 4, Lect TTh, 6-7:15, MoosT 2-650; Lab TTh, 7:30-9:15, KoltH S167

Spring Qtr, ★●Sec 5, Lect TTh, 6-7:15, MoosT 2-650; Lab TTh, 7:30-9:15, KoltH S170

Spring Qtr, ★●Sec 6, Lect TTh, 6-7:15, MoosT 2-650; Lab TTh, 7:30-9:15, KoltH S177

Biol 1103 GENERAL BOTANY. 5 credits, §3012, tuition*: Resident \$350; Non-resident \$1015.

Levels of organization of plants, plant function, plant growth and development, plant reproduction. (Prereq 1009. Limited to 20)

Winter Qtr, ★Sec 1, Lect TTh, 6-7:10, BioSci 12, StP Campus, Koukkari; Lab TTh, 7:30-9:30, BioSci 176, StP Campus, Koukkari

(See also CSch 0536, Supermarket Botany)

Biol 1201 EVOLUTIONARY AND ECOLOGICAL PERSPECTIVES. 5 credits, §Biol 1008, tuition* (includes \$10 course fee): Resident \$360; Non-resident \$1025.

An introductory biology course with emphasis on general evolutionary and ecological principles. Scientific inquiry, history of evolutionary thought, variation, heredity, evolutionary mechanisms, origin and evolutionary history of life including evolution of humans, population biology, ecology of communities and ecosystems, behavioral ecology. *Note: No credit given if credit has been received for Biol 1008.* (No prereq. Lectures meet concurrently. A joint Day/Extension class limited to 20 Extension students)

Winter Qtr, ★●Sec 1, Lect M, 6-9, MoosT 2-650; Rec/Lab T, 6-9, KoltH S183

Winter Qtr, ★●Sec 2, Lect M, 6-9, MoosT 2-650; Rec/Lab T, 6-9, KoltH S187

Winter Qtr, ★●Sec 3, Lect M, 6-9, MoosT 2-650; Rec/Lab Th, 6-9, KoltH S183

Winter Qtr, ★●Sec 4, Lect M, 6-9, MoosT 2-650; Rec/Lab Th, 6-9, KoltH S187

Biol 1301 HUMAN REPRODUCTION AND DEVELOPMENT. 4 credits, §3012, tuition*: Resident \$280; Non-resident \$812.

Human development from gametogenesis to senescence. Ovulation, sperm release, fertilization, transit of early embryo to uterus, implantation, fetal membranes, cellular differentiation, organogenesis, birth, adolescence, puberty, and senescence. Congenital defects, birth control, multiple births, and human cytogenetics in relation to development. *In vitro* fertilization. (Prereq 1009 or equivalent. A joint Day/Extension class)

Winter Qtr, ●Sec 1, TTh, 4-5:40, Phys 166, McKinnell

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Biol 3011 ANIMAL BIOLOGY. 5 credits, §Biol 1106, tuition*: Resident \$412.50; Non-resident \$1196.25.

Comparison of ways different phyla have solved similar physiological problems. Laboratory includes survey of major animal groups and physiological experiments. TTh labs begin Sept. 28; WF labs begin Sept. 29. (Prereq Biol 1009, Chem 1005. Lectures meet concurrently and with 3111. A joint Day/Extension class limited to 2 Extension students unless otherwise indicated below)

Fall Qtr, ★○Sec 1, TTh, Lect, 5:30-6:45, ClaOff B45, StP Campus, Kerr; TTh, Lab, 12:50-2:30, BioSci 107, StP Campus

Fall Qtr, ★○Sec 2, TTh, Lect, 5:30-6:45, ClaOff B45, StP Campus, Kerr; TTh, Lab, 3-4:40, BioSci 107, StP Campus (Limit 8)

Fall Qtr, ★○Sec 3, TTh, Lect, 5:30-6:45, ClaOff B45, StP Campus, Kerr; TTh, Lab, 3-4:40, BioSci 176, StP Campus (Limit 8)

Fall Qtr, ★○Sec 4, TTh, Lect, 5:30-6:45, ClaOff B45, StP Campus, Kerr; TTh, Lab, 7-8:40, BioSci 176, StP Campus (Limit 8)

Fall Qtr, ★○Sec 5, TTh, Lect, 5:30-6:45, ClaOff B45, StP Campus, Kerr; TTh, Lab, 7-8:40, BioSci 107, StP Campus (Limit 10)

Fall Qtr, ★○Sec 6, TTh, Lect, 5:30-6:45, ClaOff B45, StP Campus, Kerr; WF, Lab, 10:40-12:20, BioSci 107, StP Campus

Fall Qtr, ★○Sec 7, TTh, Lect, 5:30-6:45, ClaOff B45, StP Campus, Kerr; WF, Lab, 12:50-2:30, BioSci 107, StP Campus

BioC 3021 (formerly Biol 5001) BIOCHEMISTRY. See listing under Biochemistry.

Biol 3051 BIOLOGY AND THE FUTURE OF THE EARTH. 4 credits, tuition*: Resident \$330; Non-resident \$957. (IS)

Nontechnical discussion of current environmental issues, including air and water pollution, human population growth, toxic and hazardous wastes, urbanization, resource economics, biological diversity, energy, health, and environmental ethics. **Bioscience students may not apply these credits toward major.** (No prereq. A joint Day/Extension class limited to 25 Extension students)

Fall Qtr, ★○Sec 1, MW, Lect, 4-5:40, Arch 60, Cunningham

Biol 3111 ANIMAL BIOLOGY. 4 credits, §Biol 3011, tuition*: Resident \$330; Non-resident \$957. Comparative physiology of various animal groups; coordination, movement, support, excretion, reproduction. (Prereq 1009, 1106, Chem 1005. Lectures meet concurrently with Biol 3011 lecture. A joint Day/Extension class)

Fall Qtr, ○Sec 1, TTh, 5:30-7:10, ClaOff B45, StP Campus, Kerr

Biol 5003 GENETICS. 4 credits, §GCB 3022, §GCB 5022, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Introduction to the nature of genetic information, its transmission from parents to offspring, its expression in cells and organisms, and its course in populations. (Prereq 5001. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ○Sec 1, MW, 6:30-8:10, ClaOff B35, StP Campus, Snustad

Biol 5004 CELL BIOLOGY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026. (IS)

Structures and functions of membranes, organelles, and other macromolecular aggregates found in plant, animal, and bacterial cells. Cell form and movement, intercellular communication, transport, and secretion. (Prereq Biol 5001. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ○Sec 1, TTh, 6-7:15, BorH 335, StP Campus, Cunningham

BioC 5025 LABORATORY IN BIOCHEMISTRY. See listing under Biochemistry.

Biol 5950 SPECIAL TOPICS IN BIOLOGY: TEACHING BIOLOGY SEMINAR. 2-3 credits, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Designed to facilitate the exchange of participants' ideas and experiences, the course examines a variety of pedagogical philosophies and practices. Guest speakers present occasionally for the seminar. The course facilitates sharing of ideas and experiences relevant to teaching biology among graduate students, University faculty, community college, and high school faculty. The seminar will be tailored to the needs of those enrolled. A teaching journal, course evaluation, classroom observation, and final group projects are required assignments for those earning two credits. An additional hour's credit for extra work completed may be arranged with permission of the seminar coordinators. (No prereq. Qualified students

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Winter Qtr, ★○Sec 1, M, 4-6, Ecology Bldg,
StP Campus

Biol 5950 SPECIAL TOPICS BIOLOGY. 2-4 credits, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Meets concurrently with a multidisciplinary course, ID 5615-5616-5617 (Ways of Knowing: Six Disciplines Examined), page 245. Faculty from six different disciplines meet together with students weekly for a full academic year to discover how various academic disciplines ask questions, gather information, and validate theories. Disciplines examined include, genetics, African-American studies, economics, agriculture and applied economics, and art history. Students must enroll each quarter for four credits of the ID 5615-5616-5617 or four credits of corresponding special topics courses; students must enroll all three quarters to receive credit. Limited to a combined total of 18 students. *For information about registration and graduate credit, call (612) 625-3898.*

Biol 5951 SOCIAL USES OF BIOLOGY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Influence of biological science on the quality of human life: agriculture, medicine, occupational health, environmental science, and theories of human nature. Responsibilities and roles of biologists in policy formulation in the scientific and political world. **Must be taken S-N.** (Prereq 10 science credits. Qualified students may register for graduate credit at the University of Minnesota. Limited to 35)

Spring Qtr, ★Sec 1, T, 6:20-8:50, BioSci 70, StP Campus, Hooper

Botany (Bot)

(See Plant Biology, page 293)

Business Administration Courses through the Carlson School of Management

The Carlson School of Management offers degree and certificate programs. See the Degrees and Certificates section of this Bulletin.

Please see the following alphabetical listings for course offerings:

- Accounting
- Business Finance (see Finance)
- Business, Government, and Society
- Business Law
- Industrial Relations
- Information and Decision Sciences
- Insurance
- Logistics Management
- Management
- Marketing
- Operations and Management Sciences

(See also Economics; Comp 3022, Critical Reading and Writing for Management; Comp 3032, Pre-Professional Writing for Business; Rhetoric; Certified Employee Benefits Specialist [in Industrial Relations]; and General College)

For noncredit conferences or seminars in business and management, write or call Continuing Management Education, 338 Nolte Center, 625-2561; Executive Development Center, 280 Hubert H. Humphrey Center, 624-2545; and Employer Education Service, 423 Management/Economics Building, 624-5525.

Undergraduate Program—Students interested in the Bachelor of Science in Business degree offered through the Carlson School of Management should contact the Undergraduate Program office in room 290 of the Hubert H. Humphrey Center, 624-3313.

MBA Program—Students interested in the Master of Business Administration degree offered through the Carlson School of Management should contact the MBA Program office in room 295 of the Hubert H. Humphrey Center; telephone 624-0006 for information.

Business and Marketing Education

(See Vocational and Technical Education)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Business, Government, and Society (BGS)

(835 Management/Economics: 624-5232)
Carlson School of Management

Textbooks for most BGS courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

Joseph Goldman, Lecturer in Strategic Management
 Abbas Mehdi, Lecturer in Strategic Management
 William Seeley, Lecturer in Strategic Management

Business degree students must take Business, Government, and Society courses A-F.

NOTE: Students taking Carlson School of Management upper division undergraduate courses through CEE are expected to have completed the equivalent of 90 quarter college credits with a minimum of a "B-" grade average.

BGS 3003 BUSINESS AND THE NATURAL ENVIRONMENT. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Management strategies to comply with environmental laws are surveyed. Course examines management systems to reduce environmental impacts caused by resource use, hazardous waste disposal, and manufacturing. Methods for siting industrial plants and controlling pollution are explored. In-class mediation and team debates are used to discuss environmental issues. May not be taken S-N. (Prereq junior or senior and at least 90 credits completed or in progress. Limited to 35)

Winter Qtr, ★Sec 1, W, 6-8:45, BlegH 240,
 Seeley

BGS 3004 INTERNATIONAL BUSINESS. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

World business with emphasis on the global economy, international concepts, global business structures, comparative cultures and environments, global business strategies, multinational corporations and technology, personnel and operations in the host nations. Resource (including energy) questions in their global contexts: quantities, demands, distribution of resources. **May not be taken S-N.** (Prereq at least 90 credits completed or in progress. Limited to 40 students)

Fall Qtr, ★Sec 1, M, 6-8:45, BlegH 215
 Winter Qtr, ★Sec 2, T, 6-8:45, BlegH 120,
 Mehdi
 Spring Qtr, ★Sec 3, Th, 6-8:45, BlegH 215,
 Goldman

BGS 3019 TOPICS IN BUSINESS, GOVERNMENT, AND SOCIETY: U.S.-ASIAN TRADE PRACTICES: Opportunities and Obstacles to Market Penetration. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Reviews current trade and business investment practices between U.S. companies in Japan, Taiwan, China, Hong Kong, Korea, Singapore, Malaysia, and Thailand. Cultural, legal, and structural trade barriers are examined. Regulations and customary business practices in Pacific Rim nations toward expatriate American men and women are examined in depth. Direct investment laws and regulations of Asian nations applied to foreign companies are surveyed. **May not be taken S-N.** (Prereq 3002 and completion of business core courses or #; BGS 3019 [Japanese Management Systems] and/or BGS 3004 recommended but not required. Limited to 35)

Spring Qtr, ★Sec 1, W, 6-8:45, BlegH 130,
 Seeley

Business Finance

(See Finance)

Business Law (BLaw)

(675 Management/Economics: 624-9358)
Carlson School of Management

Textbooks for most BLaw courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also General College)

Albert O. Andrews, Jr., Lecturer and
 Coordinator of Business Law
 Donald Campbell, Lecturer
 Warren E. Eastlund, Lecturer
 Thomas Lovett, Lecturer
 Gregory Soule, Lecturer
 Thomas Thorfinnson, Lecturer

NOTE: Students taking Carlson School of Management upper division undergraduate courses through CEE are expected to have completed the equivalent of 90 quarter college credits with a minimum of a "B—" grade average.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.
 * Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

BLaw 0001 COMMON LEGAL PROBLEMS. 3 certificate credits, tuition* (includes \$16 special fee): \$226.

Provides a comprehensive course in everyday legal principles, designed to assist laypersons in recognizing their legal rights and more intelligently and efficiently managing their personal affairs. This course considers legal problems such as: purchase, sale, rental, or lease of homes and other real property; making of wills and handling of estates; preparation of income tax returns; rights of persons injured in accidents and liability of persons causing accidents; liability for various other types of tortious conduct; making of contracts; sale of personal property; negotiable instruments; formation and operation of small business as a sole proprietorship, partnership or corporation; workers' compensation laws; rights and responsibilities within family, including divorce; collection of monies through garnishment, attachment, and mechanic's liens; criminal law. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, Th, 6:20-8:50, RarigC 610, Thorfinnson

BLaw 0098 BUSINESS LAW—LAW OF REAL PROPERTY. 3 certificate credits, tuition* (includes \$16 special fee): \$226.

The study of the nature and classification of real estate; deeds and conveyances; landlord and tenant; recording and abstracting; torrens titles; mortgages; wills; probating of estates, etc. (No prereq. Limited to 30)

Spring Qtr, ★Sec 1, W, 6:20-8:50, Law 1, Soule

BLaw 3058 INTRODUCTION TO LAW, THE LAW OF CONTRACTS AND SALES CONTRACTS. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

Study of the origin of law, its place in and effect upon society; the history and development of law; the system of courts; and legal procedure. An extensive study of the law of contracts as the basic law affecting business transactions; and law affecting the sales of goods contracts. May not be taken S-N. (Prereq Econ 1101 or equivalent and at least 90 credits completed or in progress. Limited to 45)

Fall Qtr, ★Sec 1, M, 6-9, BlegH 255, Lovett

Fall Qtr, ★Sec 2, T, 6-9, BlegH 155, Campbell

Winter Qtr, ★Sec 3, M, 6-9, BlegH 225, Andrews

Winter Qtr, ★Sec 4, T, 6-9, BlegH 135, Campbell

Spring Qtr, ★Sec 5, M, 6-9, AndH 230, Andrews

Spring Qtr, ★Sec 6, Th, 6-9, AndH 230, Campbell

Note: Students for whom BLaw and 3088 are required for a degree or certificate should complete these courses during 1993-94. These courses are currently under review for continuance.

BLaw 3078 LAW: AGENCY, PARTNERSHIPS, CORPORATIONS, AND COMMERCIAL PAPER. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

A study of law affecting the relationship between principal and agent, master and servant, and employer and employee. Includes the study of the partnership and corporate forms of business entities, including the methods of creating the relationships, and the law developed to regulate and control these organizations and their members and contracts referred to as commercial papers (negotiable instruments), with emphasis on effect of the Uniform Commercial Code. (Prereq 3058 and at least 90 credits completed or in progress. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★Sec 1, M, 6-9, BlegH 335, Eastlund

BLaw 3088 LAW OF PERSONAL PROPERTY, REAL PROPERTY, AND WILLS AND ESTATES. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

Study of the basic concepts of personal property, including rights of possessors, bailee, finders and holders of security interests and includes the study of the basic concepts and principles of real property law; transfers of ownership, control of and encumbering such interests. Concludes with a brief study of the law of wills and estates in passing rights to property in event of death. (Prereq 3058 and at least 90 credits completed or in progress. A joint Day/Extension class limited to 25 Extension students)

Spring Qtr, ★Sec 1, M, 6-9, BlegH 335, Eastlund

Cell Biology and Neuroanatomy (CBN)

(4-135 Jackson Hall: 624-1123)

Medical School

Textbooks for most CBN courses are available at the Health Sciences Bookstore (625-8600).

(See also Biology; Physical Medicine and Rehabilitation; and GC 1134, Cardiovascular Anatomy and Physiology)

Donald W. Robertson, Associate Professor

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

CBN 3001 (formerly Anat 3001) ELEMEN-TARY ANATOMY. 5 credits, tuition*: Resident \$640; Non-resident \$1856.

Survey of human anatomy, with some clinical and functional correlations. (Prereq 1 qtr of college biology. Limited to 60)

Spring Qtr, ★Sec 1, T, 6-8, MoosT 2-520, Robertson; W, 6-9:40, MoosT 2-520, Robertson

Chemical Dependency Counseling

(See Family Social Science)

Chemistry (Chem)

(115 Smith Hall: 624-0026)

Institute of Technology

Textbooks for most Chem courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also GC 1166, Physical Science: Principles of Chemistry)

A \$40 chemistry deposit card is required for all the laboratory courses in chemistry. Information concerning the procurement of this card will be given at the first meeting of each class. This card is available at the Extension Cashier's Office in 138 Wesbrook Hall. The office is open until 8 p.m. most evenings early in the quarter (telephone 625-3333 to verify hours); when it is not open in the evening, cards are available for purchase (payment by personal check required) at the Information Desk in the Registration Office, 101 Wesbrook Hall. Charges for laboratory material and breakage will be punched out of the \$40 deposit card. The balance will be returned to the student at the end of the quarter.

Note: Enrollment in Chem 1001, 1051, and 1052 is contingent on the satisfactory completion of a pretest to verify adequate preparedness. For dates, times, and locations of the chemistry pretests, please call 624-0026.

Chem 1001 GENERAL PRINCIPLES OF CHEMISTRY. 4 credits, §Chem 1003, 1008, tuition* (includes \$5 special fee): Resident \$285; Non-resident \$817.

Introduction to chemistry, matter and energy, atoms, molecules, chemical bonding, the mole and chemical calculations, gases, liquids, solids, solutions, chemical reactions, acids, bases and equilibrium. (Prereq

high school chemistry or equivalent; 2 yrs high school mathematics required, 4 yrs recommended; high school physics recommended. Limited to 100)

Fall Qtr, ★Sec 1, Rec T, 6-6:50; Lab T, 7-9:45, Smith 249*; Lect Th, 6-9, SciCB 325**

***The first class meeting is always a lecture in SciCB 325, whether it is listed as lecture or laboratory. All students must attend the first class meeting and first lab meeting or risk losing their place in class.*

Chem 1051-1052 CHEMICAL PRINCIPLES I AND II. 4 credits each quarter, tuition* each quarter (includes \$5 special fee): Resident \$285; Non-resident \$817.

Atomic theory, periodic properties of elements, chemical thermodynamics, development of the use of structural concepts, geometry of molecules, bonding theory, behavior of the gaseous and liquid states, solid state and materials chemistry, dynamics, equilibrium, behavior of solutions, acids and bases, descriptive chemistry of elements and compounds. (Prereq 1001 or passing chemistry placement examination for 1051. 1051 for 1052. Limited to 100)

Winter Qtr, 1051, ★Sec 1, Rec T, 6-6:50; Lab T, 7-9:45, SmithH 110*; Lect Th, 6-9, SciCB 325**

Spring Qtr, 1052, ★Sec 1, Rec T, 6-6:50; Lab T, 7-9:45, SmithH 210*; Lect Th, 6-9, SciCB 325**

***The first class meeting is always a lecture in SciCB 325, whether it is listed as lecture or laboratory. All students must attend the first class meeting and first lab meeting or risk losing their place in class.*

Chem 3100 QUANTITATIVE ANALYSIS. 3 credits, 3100-3101†, tuition*: Resident \$247.50; Non-resident \$717.75.

A survey of quantitative methods of analysis. Lecture. Not for chemistry majors. (Prereq 1052. Limited to 50 students)

Spring Qtr, ★Sec 1, MW, 6:15-7:30, SciCB 375

Students interested in taking Quantitative Analysis Laboratory (Chem 3101†) should be aware that the course is not available through Extension. However, Extension students are able to register for the regular day school sections through the Extension Division for fall quarter and first summer session. Extension students interested in taking this course would have to accommodate themselves to the regularly scheduled laboratory periods during these quarters. Laboratory sessions are usually offered two days a week from 1:25 p.m. to 5:15 p.m.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Chem 3301-3302 ELEMENTARY ORGANIC CHEMISTRY LECTURE I-II. 4 credits each quarter, tuition each quarter*: Resident \$330; Non-resident \$957.

Important classes of organic compounds, both aliphatic and aromatic, together with some heterocyclic compounds. (Prereq 1052 or equivalent for 3301; 3301 for 3302. Limited to 100)

Fall Qtr, 3301, ★Sec 1, Lect MW, 6-7:55, SciCB 325

Winter Qtr, 3302, ★Sec 2, Lect MW, 6-7:55, SciCB 325

Chem 3303 ELEMENTARY ORGANIC CHEMISTRY LABORATORY III. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Basic principles of organic chemistry and survey of organic reaction mechanisms to coordinate knowledge acquired in 3301, 3302, 3305, and 3306. (Prereq 3302, 3306 [passing grade in 3306 required for cr in 3303]. Limited to 100)

Fall Qtr, ★Sec 1, MW, 6-7:55, SciCB 375

Chem 3305-3306 ELEMENTARY ORGANIC CHEMISTRY LABORATORY I-II. 2 credits each quarter, tuition* each quarter (includes \$5 special fee): Resident \$170; Non-resident \$483.50.

Laboratory work includes the preparation of typical substances treated in 3301-3302. (Prereq 3301 or ¶3301 for 3305, 3302 or ¶3302 for 3306. Limited to 48)

Fall Qtr, 3305, ★Sec 1, Lect, Th, 5:30-6:15, SmithH 331; Lab, Th, 6:15-10, SmithH 349*

Winter Qtr, 3306, ★Sec 1, Lect, Th, 5:30-6:15, SmithH 331; Lab, Th, 6:15-10, SmithH 349*

*All students must attend first lab meeting or risk losing their place in class.

Chicano Studies (Chic)

(102 Scott Hall: 624-6309)

College of Liberal Arts

Textbooks for most Chic courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Marilyn Bowman, Lecturer

Maria Calderon, Lecturer

Guillermo Rojas, Associate Professor

(See also History)

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Chicano Studies. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Study Abroad Opportunities—A wide variety of Spanish courses, including internships, are offered in several Spanish-speaking countries through the Global Campus. For information, call 625-3379.

Chic 3105 INTRODUCTION TO CHICANO STUDIES: THE BEGINNINGS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Convergence of Europe and America in Mesoamerica and the formation of Mexican society. Literary, social, cultural, and historical perspectives. Columbian period to 1821. *Meets CLA World Studies requirement.* (No prereq. Limited to 35)

Spring Qtr, ★Sec 1, M, 6:20-8:50, FolH 218, Rojas

Chic 3330 TOPICS: HISPANIC WOMEN IN THE U.S.: A Diversity of Roles and Conditions. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Hispanic women in the labor market: education, family, and work. (No prereq. Meets concurrently with WoSt 3400 sec 1)

Fall Qtr, Sec 1, T, 6:20-8:50, FordH 40, Calderon

Chic 3427 HISTORY OF CUBA AND PUERTO RICO. 4 credits, §Hist 3427, tuition*: Resident \$294; Non-resident \$852.60.

Historical development of Cuba and Puerto Rico from Spanish conquest to present. Conquest and colonization, slavery, Hispanic Caribbean society and culture, Operation Bootstrap, Cuban revolution. *Meets CLA World Studies requirement.* (No prereq. Meets concurrently with Hist 3427)

Spring Qtr, Sec 1, W, 6:20-8:50, BuH 120, Bowman

Chic 3441 THE SPANISH-MEXICAN BORDERLANDS AND THE CHICANO EXPERIENCE TO 1900. 4 credits, §Hist 3441, tuition*: Resident \$294; Non-resident \$852.60.

The history of Chicanos to 1900. The Spanish conquest and colonization of the borderlands. Mexican society in the early 19th century, the Mexican-American War and aftermath. *Meets CLA Cultural Pluralism requirement.* (No prereq. Meets concurrently with Hist 3441)

Winter Qtr, Sec 1, W, 6:20-8:50, ScottH 4, Bowman

Chic 3507 INTRODUCTION TO CHICANO LITERATURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

History, background, readings in all genres of Chicano literature. *Meets CLA Cultural Pluralism requirement.* (No prereq)

Winter Qtr, Sec 1, M, 6:20-8:50, FolH 218, Rojas

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Chic 3508 INTRODUCTION TO CHICANO LITERATURE: TEXT AND CONTEXT. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. Major literary works by Chicano writers in their social and historical context. *Meets CLA Cultural Pluralism requirement.* (No prereq)

Fall Qtr, Sec 1, M, 6:20-8:50, FolH 218, Rojas

Child and Adolescent Psychiatry (CAPy)

(D-697 Mayo: 626-6577)
Medical School

Class materials are provided.

Gerald J. August, Ph.D., Associate Professor
 Michael Bloomquist, Ph.D., Research Psychologist
 Barry D. Garfinkel, M.D., Associate Professor
 Harry M. Hoberman, Ph.D., Assistant Professor
 Beth Troutman, Ph.D., Staff Psychologist

Workshops—The following series of workshops is intended to offer in-depth information on assessment and treatment strategies in child and adolescent psychiatry. Please call Workshop Coordinator, Dr. Gerald August, at 626-6577 with questions; or write Box 95 Mayo, University of Minnesota, Harvard Street at East River Road, Minneapolis, MN 55455.

Please note: For undergraduate and graduate credit, satisfactory performance on an exam is required. In addition, a relevant paper may be required for graduate credit. If a student does not want academic credit but needs evidence of attendance, registration on an audit basis is suggested. Read about Auditors in the Enrollment Information section of this bulletin (see Index for page number).

CAPy 5620 ATTENTION-DEFICIT HYPERACTIVITY DISORDER: DIAGNOSTIC STRATEGIES AND EDUCATIONAL INTERVENTIONS. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Attention-Deficit Hyperactivity Disorder (ADHD) is a leading cause of behavioral and educational problems in children and adolescents. Some children continue to experience symptoms well into their adult years. In this workshop, the problem of Attention Deficit Disorder will be thoroughly reviewed, including traditional definitions, conflicting theories of causation, and long-term consequences. Specific assessment techniques for identifying deficits will be covered. Various treatment approaches, including

parent management and educational intervention, will be thoroughly discussed. The role of medication in the overall care of such children is critically reviewed. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Spec Term, **Sec 1, Sa, Nov. 6, 1993.** Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, August. *No late fee through Oct. 29*

CAPy 5623 AFFECTIVE DISORDERS AND SUICIDE IN CHILDREN AND ADOLESCENTS: PERSPECTIVES ON PREVALENCE, ETIOLOGY, AND PREVENTION. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Characteristics of depression and suicidal behavior in children and adolescents are reviewed. Methods of crisis intervention, treatment, and prevention are presented. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Spec Term, **Sec 1, Sa, Oct. 2, 1993.** Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, Hoberman. *No late fee through Sept. 24*

CAPy 5624 EATING DISORDERS IN CHILDREN AND ADOLESCENTS: MEDICAL AND PSYCHOLOGICAL PERSPECTIVES. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Clinical characteristics of anorexia and bulimia nervosa in children and adolescents are described. Etiological factors are considered and multidimensional treatment approaches are discussed. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Spec Term, **Sec 1, Sa, Apr. 23, 1994.** Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, Hoberman. *No late fee through Apr. 15*

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

CAPy 5627 AGGRESSIVE, DELINQUENT, AND CONDUCT DISORDERED BEHAVIOR IN CHILDREN. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Society has experienced increasing rates of antisocial, violent, aggressive, and delinquent behavior in its youth. This course will provide an overview of these problems and focus on assessment and intervention methods. Psychiatric, social, empirical, and legal definitions and descriptions of these problems will be discussed. Child, family, school, and social/cultural factors that place children at risk for these difficulties will be presented. A major emphasis will be on assessment and interventions for these children and their families. Social, school-based, and preventative intervention approaches also will be reviewed. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Spec Term, ⓪Sec 1, Sa, Oct. 30, 1993. Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, Bloomquist. *No late fee through Oct. 22*

CAPy 5629 PSYCHIATRIC MEDICATIONS FOR CHILDREN AND ADOLESCENTS. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

A comprehensive review of all important medicines currently used in the treatment of psychiatric disorders in children and adolescents. The neuropharmacologic bases of drug actions, and the neurotransmitter systems with which drugs interact will be described. The use of objective methods for analyzing behavioral and cognitive response to drugs will be discussed. The clinical application of drugs with children, including potential side effects and psychological stigma will be examined in detail. Current research involving children with depression, Attention Deficit Disorder, Obsessive Compulsive Disorder, and anxiety disorders will be presented. The neurochemical bases of pharmacological treatment for these conditions will be discussed. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Spec Term, ⓪Sec 1, Sa, Nov. 13, 1993. Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, Garfinkel. *No late fee through Nov. 5*

CAPy 5630 PSYCHOTHERAPY IN CHILDREN AND ADOLESCENTS. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Different approaches to psychotherapeutic intervention with children and adolescents will be covered. Topics to be covered will include short-term dynamic psychotherapy, behavioral therapy, cognitive-behavioral therapy, and family therapy. In addition, the psychotherapy outcome research literature will be reviewed. The emphasis is on presenting an overview of the major schools of psychotherapy with children. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Spec Term, ⓪Sec 1, Sa, Jan. 8, 1994.

Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, Bloomquist. *No late fee through Dec. 30*

CAPy 5632 COGNITIVE-BEHAVIORAL THERAPY FOR IMPULSIVE AND HYPERACTIVE CHILDREN. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Therapeutic approaches for treating serious behavioral problems in children abound, but few have been shown to have long-term efficacy. This workshop focuses on cognitive-behavioral approaches to the treatment of behavioral, emotional, and academic problems in children. Cognitive-behavioral therapies teach children to "stop and think," and also teach ways to get children to examine behavioral alternatives. Specific topics covered will include self-instructional training and problem-solving training. The application of cognitive-behavioral therapy to the treatment of impulsivity in children with attention deficit disorder will be illustrated. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Spec Term, ⓪Sec 1, Sa, Jan. 22, 1994.

Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, August. *No late fee through Jan. 14*

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

CAPy 5633 ANXIETY DISORDERS IN CHILDHOOD AND ADOLESCENCE. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Characteristics of the spectrum of anxiety disorders in youth are described. Information on the prevalence and significant characteristics of school phobia, panic attack, separation anxiety, and obsessive-compulsive disorder in children and adolescents will be presented. A variety of etiological factors in the development of anxiety disorders will be discussed, including biological, social, and psychodynamic influences. Assessment issues and procedures both in the clinic and the community will be reviewed. Various approaches to intervention with children and adolescents with anxiety disorders will be described, as well as strategies for prevention of these conditions. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Spec Term, ○Sec 1 Sa, Oct. 9, 1993. Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, Troutman. *No late fee through Oct. 1*

CAPy 5635 COGNITIVE-BEHAVIORAL THERAPY FOR CHILDREN AND ADOLESCENTS. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Cognitive-behavioral therapies include a variety of therapeutic procedures which have the goal of increasing children's ability to control their own behavior and emotions. The theoretical basis and therapy outcome research literature related to cognitive-behavioral therapy will be reviewed. The presentation will describe assessment strategies relevant to cognitive-behavioral therapy. Specific cognitive-behavioral procedures geared toward children with externalized behavioral and internalized emotional disorders will be discussed. The participant will learn about problem-solving techniques, verbal self-instruction training, rational-emotive therapy, attributional retraining and stress inoculation procedures to applied child populations. Emphasis will be placed on methods useful in promoting generalization and maintenance of treatment effects. The presentation also will highlight a model for working with families and school systems within the cognitive-behavioral framework. (No prereq. Qualified students may register for graduate credit at the Uni-

versity of Minnesota. A joint Day/Extension class) Spring Spec Term, ○Sec 1, Sa, May 7, 1994.

Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, Bloomquist. *No late fee through Apr. 29*

CAPy 5636 RECENT ADVANCES IN THE ASSESSMENT AND TREATMENT OF ATTENTION-DEFICIT HYPERACTIVITY DISORDER. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Although there is a growing body of knowledge pertaining to various aspects of Attention-Deficit Hyperactivity Disorder (ADHD), only a small amount of what is currently available directly addresses the assessment and treatment of the disorder. Begins with a review of specific screening and assessment techniques that are employed to identify and diagnose children and adolescents with attentional problems. A functional-based diagnostic assessment model is presented and examples of the application of the approach with ADHD children is provided. The utility of behavior rating scales, structured interview schedules, general abilities tests, and neuropsychological measurement procedures is demonstrated. The short- and long-term effects of psychostimulant medication (e.g., Ritalin) and their side effects will be examined, and alternative drugs will be discussed. Behavioral and cognitive-behavioral intervention approaches and the results of studies employing these methods will be presented and critically evaluated. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Spec Term, ○Sec 1, Sa, Dec. 4, 1993. Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, August. *No late fee through Nov. 24*

CAPy 5638 INTERVENTION/PREVENTION OF EMOTIONAL-BEHAVIORAL DIFFICULTIES WITHIN THE SCHOOLS: FAMILY AND SCHOOL-BASED INTERVENTION APPROACHES. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

A framework for the practice of psychology in the schools for the prevention of emotional, behavioral, and learning problems. It is assumed that preventive efforts in the schools will be increased if mental health

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

professionals work collaboratively with school professionals to develop programs that can be implemented within the normal school curriculum and instructional process. Considers child psychopathology from a developmental perspective that includes such topical issues as early experiences and their effects, risk, and vulnerability factors, and competence and resiliency in early childhood. Classification and assessment of children's emotional/behavioral problems are covered with an emphasis on those methods that can be used for screening, diagnosis, and prescription. Finally, a comprehensive model for the design and evaluation of school-based prevention and promotion programs will be presented. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Spec Term, ●Sec 1, Sa, Apr. 16, 1994.

Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, August. *No late fee through Apr. 8*

CAPy 5639 BEHAVIOR PROBLEMS IN PRE-SCHOOL CHILDREN. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

The psychological development of infants and young children and characteristic problems in this age group will be reviewed. Problems discussed will include disturbances in regulation, attachment, sleep, and social development. Both common problems and more severe disorders will be covered (e.g. excessive crying, reactive attachment disorder, sleep disturbances, and oppositional behavior). Approaches to assessment, prevention, and intervention will be discussed. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Spec Term, ●Sec 1, Sa, Feb. 26, 1994.

Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, Troutman. *No late fee through Feb. 18*

CAPy 5640 PSYCHIATRIC TREATMENT OF THE DISRUPTIVE DISORDERS. 1 credit, tuition*: Resident \$128; Non-resident \$371.20; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Reviews the primary and associated behaviors of the three disruptive disorders, namely conduct disorder, oppositional defiant disorder, and Attention Deficit Hyperactivity Disorder. The treatment of these disor-

ders has been complicated by other psychiatric, social, and educational problems. Consideration of the complicated clinical picture is reviewed. Specific psychiatric, behavioral, and innovative treatment strategies are described in detail. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class) Winter Spec Term, ●Sec 1, Sa, Jan. 29, 1994.

Late registrations accepted with \$5 late fee from 8 to 8:30 a.m. Workshop runs from 8:30 a.m. to 3:30, MoosT 2-620, Garfinkel. *No late fee through Jan. 21*

Child Psychology (CPsy)

(104 Child Development: 624-1891)

College of Education

(Institute of Child Development)

Textbooks for most CPsy courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also GC 1284, Behavior Problems of Children; Youth Studies; and The Practical Scholar courses in Human Development)

Bruce L. Bobbitt, Psychologist, Wilder Foundation, St. Paul

Judith L. Brown, Psychologist, Minneapolis Public Schools

William R. Charlesworth, Professor, Institute of Child Development

Ann M. Ellis, Lecturer

Seymour Z. Gross, Clinical Associate Professor, Department of Health Care Psychology and Director of Mental Health Services, Pilot City Health Center

Harry Hoberman, Assistant Professor, Psychiatry
Ann Masten, Professor, Institute of Child Development

Ann Mooney-McLoone, Lecturer

Herbert L. Pick, Jr., Professor, Institute of Child Development

Ruth Thomas, Associate Professor, Vocational and Technical Education and National Center for Research in Vocational Education

James Turnure, Professor, Educational Psychology and Child Psychology

A major in Child Psychology (CLA) can be completed in the evening, but requires careful planning.

Those courses required in the major are offered yearly. Interested students should discuss plans with an adviser (625-2500).

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

B.A. Major Sequence

Required Preparatory Courses:

Psy 1001 or 5 cr of introductory psychology; CPsy 1301

Major Requirements:

3308 or Psy 1004 and 1005; Psy 3801 or equiv; 3331 or 5331, 3343, 5329; one course from 5332 or 5336; one course from 5341, 5343, 5345; one course from 5311, 5315, 5319; Senior project: 3960; minimum of 12 additional cr in any 3xxx and 5xxx child psychology courses, which may include 3330, 3980, 5970, 5990 (a total of 4 cr from these courses may be counted toward the major).

B.S. Major Sequence

Required Preparatory Courses:

Psy 1001; CPsy 1301

Major Requirements:

12-17 cr to include 3308, Psy 3801, Soc 5821 or EPsy 5240, Soc 3811 or EPsy 5281; 12 cr from 3331 or 5331, 3343, 5329; 8 cr from 3330 or 5330, 5334; 4 cr from 5341, 5343, 5345; 4 cr from 5332, 5336; 8 cr from 5311, 5315, 5319; 4 cr from 3960, senior project; 12 cr from 3xxx or 5xxx CPsy courses, which may include 3980, 5970, 5990 (only 4 cr of each course may be counted toward the major); 22-24 cr from supporting field courses.

Areas that may be included are communication disorders, computer science, education, home economics, psychology, public health, social work, sociology. See the advising office, 106 Child Development, for a list of approved courses.

Child Psychology majors may not count Psychology credits toward their 30 (BA) or 6 (BS) credits at 3000- or 5000-level outside their major.

A minor in Child Psychology (only for CLA students) is also available. Interested students should call CEE Counseling, 625-2500.

You need not be majoring in Child Psychology to register for these classes.

Child Psychology courses not used toward a major may be taken A-F or S-N in CLA.

CPsy 1301 INTRODUCTORY CHILD PSYCHOLOGY. 4 credits, \$3309, \$5301, tuition*: Resident \$280; Non-resident \$812. (IS)

Introduction to the science of child behavior; review of theories and research. (Prereq 5 cr introductory psychology. Meets concurrently with 3309. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Th, 6:20-8:50 (addn hr arr),
NichH 211

Spring Qtr, ●Sec 2, W, 6:20-8:50 (addn hr arr),
FolH 306, Charlesworth

CPsy 3303 ADOLESCENT PSYCHOLOGY. 4 credits, \$5303, tuition*: Resident \$330; Non-resident \$957.

Physical, cognitive, and social development during adolescence. (Prereq 5 cr introductory psychology. A joint Day/Extension class)

Spring Qtr, ●Sec 1, T, 6:20-8:50 (addn hr arr),
ChDev 105

CPsy 3308 RESEARCH METHODS IN CHILD PSYCHOLOGY. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Techniques used in study of child development; emphasis on collection, organization, and analysis of data. (Prereq 1301, Psy 1004. A joint Day/Extension class limited to 8 Extension students)

Fall Qtr, ★●Sec 1, M, 6:20-8:50 (addn hr arr),
ChDev 216

Winter Qtr, ★●Sec 2, T, 6:20-8:50 (addn hr arr),
ChDev 105

CPsy 3309 INTRODUCTORY CHILD PSYCHOLOGY FOR THE SOCIAL SCIENCES. 4 credits, \$1301, \$5301, tuition*: Resident \$330; Non-resident \$957.

Science of child behavior; review of theory and research; designed for majors in psychology, sociology, and related disciplines; not suggested for child psychology majors. (Prereq Psy 1001. Meets concurrently with 1301. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Th, 6:20-8:50 (addn hr arr),
NichH 211

Spring Qtr, ●Sec 2, W, 6:20-8:50 (addn hr arr),
FolH 306, Charlesworth

CPsy 3330 DIRECTED EXPERIENCES. 1-4 credits. 4 credits this offering, \$5330, tuition*: Resident \$330; Non-resident \$957.

Intellectual and/or social development of children, adolescents, or adults as individuals or members of families or peer groups. Options include active participation with an age group or training in research methods, including both experimental and observational techniques. (Prereq 1301 or equivalent. A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★●Sec 1, T, 6:20-8:50 (plus 4 addn
daytime hrs/wk required), ChDev 216

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

CPsy 3331 INTRODUCTION TO SOCIAL DEVELOPMENT. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Development of social relations and personality: research, methodology, and contrasting theoretical perspectives. Survey of findings on interpersonal relationships, the concept of self, prosocial and antisocial behavior, and acquisitions of social roles. (Prereq 1301 or equivalent. A joint Day/Extension class)
Spring Qtr, ○Sec 1, MW, 4:40-6:20, Arch 40

CPsy 3343 INTRODUCTION TO COGNITIVE DEVELOPMENT. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Development of cognitive processes; research, methodology, and contrasting theoretical perspectives. Introduction to research and theory in developmental psychology necessary to understand course material. (Prereq 1301, 3308 or Psy 1005. A joint Day/Extension class)

Spring Qtr, ○Sec 1, T, 6:20-8:50 (addn hr arr),
AmundH B75, Pick

CPsy 3960 SENIOR PROJECT IN CHILD PSYCHOLOGY. 1-4 credits, tuition* each credit: Resident \$82.50; Non-resident \$239.25.

A review of the literature in a current topic area of child psychology. Sec 3 is second quarter only. **Must be taken A-F.** (Prereq senior status, #. A joint Day/Extension class)

Fall Qtr, ○Sec 1, Th, 6:20-7:10, ChDev 105

Winter Qtr, ○Sec 2, Th, 6:20-7:10, ChDev 218

Spring Qtr, ○Sec 3, Th, 6:20-7:10, ChDev 105

CPsy 5302 INFANCY. 4 credits, §3302, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Perceptual, motor, emotional, social, and cognitive development during the first two years of life; the developing infant in its social and physical environment. (Prereq 1301 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ○Sec 1, T, 6:20-8:50 (addn hr arr),
NichH 213, Ellis

CPsy 5303 ADOLESCENT PSYCHOLOGY. 4 credits, §3303, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368. (IS)

Physical, cognitive, and social development during adolescence. (Prereq 5 or introductory psychology. Qualified students may register for graduate credit at

the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ○Sec 1, W, 4:45-7:15, NichH 211,
Hoberman

CPsy 5305 MULTIDISCIPLINARY PERSPECTIVES ON AGING. 4 credits, §AdEd 5440, §Educ 5440, §HSU 5009, §PA 5414, §Phar 3009, §PubH 5737, §SAHP 5009, §SW 5024, §Soc 5960, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Multidisciplinary introduction to aging and the aging process. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with AdEd 5440, HSU 5009, PA 5414, Phar 5009, PubH 5737, SW 5024, Soc 5960. A joint Day/Extension class)

Fall Qtr, ○Sec 1, MW, 4:40-6:25, MoosT 2-690

Spring Qtr, ○Sec 2, MW, 4:40-6:25, MoosT
2-690

(See also GC 1136, Biological Aspects of Aging)

CPsy 5310 TOPICS IN CHILD PSYCHOLOGY: CHILDREN AT RISK. 1-4 credits. 3 credits this offering, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit 513; Non-resident Graduate School credit \$1026.

Selected topics in the general content area. This offering will address developmental perspectives of children at risk for academic, behavioral, or emotional problems resulting from life circumstances such as trauma or deprivation. (Prereq 1301 or equivalent. For advanced students. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ○Sec 1, T, 6:20-8:50, ChDev 218,
Masten

CPsy 5311 INTRODUCTION TO DEVELOPMENTAL PSYCHOPATHOLOGY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Theories and research strategies to investigate origins and course of disordered behavior in childhood and adults, including description, etiology, development. Excluded are problems of physical, sensory, or mental handicaps. (Prereq 1301 or equivalent, 3308 or Psy 1005. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ○Sec 1, T, 6:20-8:50 (addn hr arr),
Elth N119, Bobbitt

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

CPsy 5313 PSYCHOLOGY OF ATYPICAL CHILDREN. 4 credits, §3313, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Problems of research, assessment, and behavior associated with atypicality; evaluation of research in areas of major concern for sensory, language, intellectual, and physical deviation. (Prereq 1301 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, M, 6:20-8:50, NichH 209, Brown

CPsy 5315 INTRODUCTION TO MENTAL RETARDATION. 4 credits, §EPsy 5620, §PsyS 5120, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Psychological and educational problems related to the mentally retarded. (Prereq 1301 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with EPsy 5620. A joint Day/Extension class limited to a combined total of 25 Extension students)

Winter Qtr, ●Sec 1, W, 4:40-8:30, ChDev 218, Turnure

CPsy 5319 INTRODUCTION TO CLINICAL CHILD PSYCHOLOGY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Survey of assessment and intervention procedures of child clinical psychology in clinical and community settings. Primarily for students not majoring in clinical psychology. (Prereq 12 cr in psychology, child psychology, educational psychology, or sociology. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, Sa, 9 a.m.-12:20, BuH 120, S Gross

CPsy 5322 MOTOR DEVELOPMENT. 3 credits, §Kin 5132, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Motor skill development from birth to physical maturity. (Prereq Kin 3132 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, W, 4:15-6:15, CookeH 215, Wade

CPsy 5329 GENETICS, ETHOLOGY, AND DEVELOPMENT. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Survey of evolutionary theory, behavioral genetics applied to understanding of development of human behavior, formation of species-typical adaptive behavior and individual differences in infancy, childhood, and adolescence. (Prereq 1301 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, TTh, 4:25-6, ChDev 218, Charlesworth

CPsy 5330 DIRECTED EXPERIENCES WITH CHILDREN. 1-4 credits. 4 credits this offering, §3330, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Intellectual and/or social development of children, adolescents, or adults as individuals or members of families or peer groups. *Focus this offering:* early childhood education. (Prereq 1301 or equivalent. For students in post-baccalaureate licensure or graduate programs only. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★●Sec 1, T, 6:20-8:50 (plus 4 additional daytime hours/week required), ChDev 216, Mooney-McLoone

Winter Qtr, ★●Sec 1, W, 6:20-8:50 (plus 4 additional daytime hours/week required), ChDev 105, Mooney-McLoone

CPsy 5331 PROCESS OF SOCIAL DEVELOPMENT. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368. (IS)

Processes of individual change from infancy through adolescence and development of capacities for and influences of social relations; research, methodology, and theoretical perspectives. (Prereq 1301 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, M, 6:20-8:50 (addn hr arr), BuH 123

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

CPsy 5336 DEVELOPMENT AND INTERPERSONAL RELATIONS. 4 credits, \$5339, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Processes and functions of interactions with parents and peers; analysis of theory and research on developmental changes and influences. (Prereq 1301 or equivalent; 3308 or Psy 1005, 3331 or 5331. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★●Sec 1, W, 4-6:30 (addn hr arr),
VoTech 380, StP Campus, Thomas

Day School Classes—In addition to the Extension classes listed above, day school classes are sometimes offered to educators during late afternoon, early evening, and weekend hours. For registration information about day school College of Education courses, see page 148 or call 625-6501.

Chinese

(See the Institute of Languages and Literatures, page 237)

Civil and Mineral Engineering (CE)

(122 Civil and Mineral Engineering: 625-5522)
Institute of Technology

Textbooks for most CE courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Research Explorations [REX])

Paul D. Capel, Adjunct Assistant Professor
Ladislav Cerny, Associate Professor
John J. Connors, Adjunct Professor
Gary A. Davis, Assistant Professor
Emmanuel Detournay, Associate Professor
Catherine E. French, Associate Professor
Theodore V. Galambos, Professor
John S. Gulliver, Associate Professor
Jerome F. Hajjar, Assistant Professor
Matthew J. Huber, Associate Professor
Robert Johns, Lecturer
Gerald W. Johnson, Associate Professor
Walter Johnson, Lecturer
Roberto T. Leon, Associate Professor
David E. Newcomb, Assistant Professor
Kenneth J. Reid, Professor

Steven R. Ruegg, Lecturer
Mark Snyder, Assistant Professor
Ray Sterling, Associate Professor, Underground Space Center
Henryk Stolarski, Associate Professor
Joel Toso, Lecturer

Your attention is called to the Undergraduate Development Certificate in Civil Engineering—90 credits, page 494.

Through registration in Extension, students may earn the majority of Civil Engineering credits required for a B.S. in Civil Engineering. See page 477 for course options. Students may not transfer upper division courses into the C.E. degree program unless they have been admitted to the Institute of Technology and the Upper Division in the Civil Engineering curriculum.

Joint Day/Extension Classes—Graduate students may register through Extension for day school and joint Day/Extension classes in Civil Engineering. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

CE 0005 REFRESHER COURSE FOR CIVIL ENGINEERS. No credit, tuition*: \$280.

This course is for practicing engineers and consists of lectures and problem sessions relating to highways, soils, environmental, structural and hydraulic engineering. **Must be taken S-N.** (Prereq BCE or equivalent degree or completion of Parts I and II of the State Board Examination)

Winter Qtr, Sec 1, T, 6:40-10, CivMinE 210,
Connors, Davis, French, Gulliver, G Johnson,
W Johnson, Leon, Newcomb, Sterling, Toso

CE 3050, 3051 ENGINEERING INTERN WORK ASSIGNMENT. 4 credits each term, tuition* each term: Resident \$330; Non-resident \$957.

Grades based on formal written report by the student covering his or her work during the six-month professional assignment. **Must be taken S-N.** (Prereq registration in intern program. A joint Day/Extension class)

Fall Spec Term, 3050, ●Sec 1, Day and Time arr
Fall Spec Term, 3051, ●Sec 1, Day and Time arr
Spring Spec Term, 3050, ●Sec 2, Day and Time arr
Spring Spec Term, 3051, ●Sec 2, Day and Time arr

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

CE 5098 ADVANCED DESIGN, ANALYSIS, RESEARCH OR TUTORIAL: TRANSPORTATION PLANNING AND SYSTEMS COMPUTER LABORATORY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Application of transportation analysis and planning techniques; evaluation of alternatives using state-of-the-art microcomputer package; solution of real-world transportation problems with emphasis on route assignment; software capabilities and limitations. **Must be taken A-F.** (Prereq CE 3200 or CE 5210 and/or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with PA 5292. Limited to a combined total of 15)

Winter Qtr, ★Sec 1, T, 6:40-10, CivMinE 202, Ruegg

CE 5104 PHOTOGRAMMETRY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Stereoscopy and parallax; geometry of single and overlapping photographs; stereoscopic plotting instruments; flight planning; aerial cameras and calibration; mosaics; terrestrial photogrammetry; principles of photo interpretation; elements of remote sensing and applications to resource evaluation. (Prereq IT or grad student, Math 1211. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Winter Qtr, ★Sec 1, Th, 6:40-10 (Lab arr Sa), CivMinE 210, G Johnson

CE 5200 GEOMETRIC DESIGN OF HIGHWAYS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Forecast of traffic volume demand; impact of vehicle type on geometric design; vertical and horizontal alignment; intersection design; highway capacity. (Prereq IT or grad student, CE 3200. Qualified students may register for graduate credit at the University of Minnesota. Limited to 50)

Spring Qtr, ★Sec 1, TTh, 6:40-8, CivMinE 210, Huber

CE 5201 HIGHWAY TRAFFIC CHARACTERISTICS AND OPERATIONS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Characteristics and measurements of volume, speed, density, and travel time; characteristics of vehicles and road users; parking characteristics and design of facilities; applications of signs, signals, and markings in traffic control. (Prereq IT or grad student, CE 3200. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★Sec 1, TTh, 4:40-6:35, CivMinE 202, Davis

CE 5301 FOUNDATION ENGINEERING. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Settlement analysis. Retaining walls and earth pressure theories. Stability of slopes. Bearing capacity of shallow foundations. Deep foundations. (Prereq IT or grad student, CE 3300, CE 3301. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★Sec 1, TTh, 4:40-6:35, CivMinE 210, Detournay

CE 5304 DESIGN OF HIGHWAY AND AIRPORT PAVEMENTS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Theories of pavement design, flexible and rigid; equivalent wheel loads. Strength tests and frost action. Design procedures for flexible and rigid pavements. (Prereq IT or grad student, CE 3300, CE 5603. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★Sec 1, MW, 4:40-6:35, CivMinE 210, Snyder

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

CE 5500 ANALYSIS AND DESIGN OF WATER SUPPLY SYSTEMS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Planning and engineering design considerations in developing water supply systems for urban centers. Supply quality, storage, treatment, distribution, and cost analysis. (Prereq IT or grad student, CE 3400 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★○Sec 1, MW, 4:40-6:35, CivMinE 212; Rec, TTh, 4:40-6:35, CivMinE 202, Reid

CE 5506 ENVIRONMENTAL WATER CHEMISTRY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Composition of natural waters and wastewater, chemical processes affecting distribution of pollutants and waters; methods of evaluation to determine fate of organic pollutants. (Prereq IT or grad student, Chem 1006 or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 50)

Spring Qtr, ★Sec 1, MW, 4:40-6:35, CivMinE 210, Capel

CE 5600 LINEAR STRUCTURAL SYSTEMS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Analysis of determinate and indeterminate linear structural systems; analysis of trusses and frames through virtual work, moment distribution, energy methods, and slope-deflection equations. Influence lines. Approximate methods of analysis. Design considerations. (Prereq IT upper division or grad student, AEM 3016. May not be taken for graduate credit by civil engineering majors; other qualified students may register in Sec 1 for graduate credit at the University of Minnesota; Sec 2 may not be taken for graduate credit at the University of Minnesota. Limited to 60)

Winter Qtr, ★○Sec 1, MW, 4:40-6:35, CivMinE 210; Rec, T, 4:40-6:35, CivMinE 210, Stolarski (A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★Sec 2, MW, 6:40-8:20, CivMinE 210, Connors

CE 5610 DESIGN OF METAL STRUCTURES: INTRODUCTION. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Loads on civil structures. Load factor and working stress philosophies of design. Design of tension, compression, and flexural members and their connections. Codes, properties of structural metals. (Prereq IT upper division or graduate student, CE 5600, ¶CE 5603. May not be taken for graduate credit by civil engineering majors; other qualified students may register in Sec 1 for graduate credit at the University of Minnesota; Sec 2 may not be taken for graduate credit at the University of Minnesota. Limited to 60)

Fall Qtr, ★○Sec 1, MW, 4:40-6:35, CivMinE 210; Rec, W, 2:30-3:20, 3:35-4:25, CivMinE 205, Hajjar (A joint Day/Extension class limited to 10 Extension students)

Winter Qtr, ★Sec 2, MW, 6:40-8:20, CivMinE 210, Connors

CE 5611 DESIGN OF REINFORCED CONCRETE STRUCTURES. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Principles of strength and serviceability in reinforced concrete structural design. Strength analysis, design of beams, joists, one-way slabs for flexure and shear. Anchorage development, splicing of reinforcement. Stresses at service, deflections, cracking, long-term effects. Introduction to design of columns; continuity; simple footings. (Prereq IT upper division, CE 5600, CE 5603 or ¶CE 5603. May not be taken for graduate credit. Limited to 60)

Fall Qtr, ★Sec 1, MW, 6:40-8:20, CivMinE 210, CivMinE 205, Connors

CE 5612 DESIGN OF METAL STRUCTURES—INTERMEDIATE. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Design of complete metal structures; plate girder bridges, industrial buildings, multistory frames. (Prereq IT upper division or grad student, CE 5610. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Winter Qtr, ★○Sec 1, MW, 4:40-6:35, CivMinE 213, Galambos

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

CE 5613 INTERMEDIATE REINFORCED CONCRETE DESIGN. 4 credits. **Not offered 1993-94.**

Eccentrically loaded columns. Shear-friction, design of brackets, deep beam design. Continuous beams and frames. Combined and continuous footings. Retaining walls. Combination of shear and torsion. Two-way slabs. (Prereq IT upper division or grad students, CE 5611. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

CE 5617 DESIGN OF MASONRY STRUCTURES. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Masonry materials and their production, mortars and grouts, design of nonreinforced and reinforced masonry structural systems, walls, columns, lintels, arches. Codes and specifications, testing, and inspection. (Prereq IT upper division or grad student, 5600 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students) Spring Qtr, ★●Sec 1, TTh, 4:40-6:35, CivMinE 205, Cerny

CE 5701 CEMENTED MATERIAL PROPERTIES: EVALUATION AND MIXTURE DESIGN. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Characteristics and performance evaluation concept of construction materials, properties, and design of cemented mixtures such as concrete, bituminous mixtures, stabilized soils, and rocks. (Prereq CE 5603. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students) Fall Qtr, ★●Sec 1, TTh, 4:40-6:35, CivMinE 212, Newcomb

CE 5703 PROJECT MANAGEMENT. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Broad, practical examination of construction project management including project planning, budgeting, scheduling, staffing, task and cost control, and communicating with, motivating, and managing team members. (Prereq senior standing, IT major. May not be taken for graduate credit at the University of Minnesota. Limited to 50)

Fall Qtr, ★Sec 1, W, 6:40-10, CivMinE 205, Johns

Classical and Near Eastern Studies

(331 Folwell Hall: 625-5353)

College of Liberal Arts

Textbooks for most Classical Studies courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Art History; Foreign Study; History; Religious Studies; and The Compleat Scholar non-credit courses)

Thomas Clayton, Professor
Frederick Cooper, Professor
Gerald Erickson, Professor
Jackson Hershbell, Professor
Sheila McNally, Professor
Oliver Nicholson, Assistant Professor
Jonathan Paradise, Associate Professor
Daniel Reisman, Associate Professor
Philip Sellow, Associate Professor
George Sheets, Associate Professor
Robert P. Sonkowsky, Professor
Soterios Stavrou, Adjunct Instructor
Theofanis Stavrou, Professor

NOTE—Classics (Clas) courses require no knowledge of Latin or Greek.

See also Ancient Near Eastern Studies, Hebrew, and Jewish Studies on page 68.

Read about language laboratories on page 51.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Classical and Near Eastern Studies. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Continuing Education for Women (CEW) section available in the following course: Clas 1042, 3035, 3152

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Classics (Clas)

You need not be majoring in Classical Civilization to register for these classes.

Clas 1024 THE AGE OF SAINT AUGUSTINE OF HIPPO (363-C. 500 A.D.). 4 credits, §3024, tuition*: Resident \$280; Non-resident \$812.

Replacement of the Roman Empire in Western Europe by barbarian kingdoms; consolidation of Constantinople as capital in the East. Literature (Augustine Confessions 397 A.D.), art and thought resulting from Christianity becoming the natural religion of the Empire; also the last pagan resistance. (No prereq. Meets concurrently with 3024)

Winter Qtr, Sec 1, T, 6:20-8:50, FolH 138,
Nicholson

Clas 1042 GREEK AND ROMAN MYTHOLOGY. 4 credits, tuition*: Resident \$280; Non-resident \$812.

The heroes, gods, and goddesses of ancient Greece and Rome. The stories of the myths and the stories behind the myths. *The class consists of 2 hours of lecture followed by discussion sections.* (No prereq)

Fall Qtr, Sec 1, M, 6-9, NichH 209a, Hershbell
Spring Qtr, Sec 2, Th, 1:15-4, MacP, Erickson.

Offered through Continuing Education for Women

Clas 1048 GREEK AND LATIN TERMINOLOGY IN THE MEDICAL AND BIOLOGICAL SCIENCES. 2 credits, tuition*: Resident \$140; Non-resident \$406. (IS)

(Prereq 1045 or ¶1141. A Joint Day/Extension class)

Fall Qtr, ○Sec 1, TW, 3:35-5, FolH 208, 116

Winter Qtr, ○Sec 2, TW, 3:35-5, FolH 218, 116

Spring Qtr, ○Sec 3, TW, 3:35-5, FolH 208, 116

Clas 1061 INTRODUCTION TO BYZANTINE CIVILIZATION. 4 credits, §5061, §MeSt 5610, tuition*: Resident \$280; Non-resident \$812.

Greco-Roman backgrounds of Byzantine civilization. Culture of the Eastern Empire through the study of history, religion, education, art, literature in translation. (No prereq. Meets concurrently with 5061, MeSt 5610)

Fall Qtr, Sec 1, T, 6:20-8:50, FolH 138,
Nicholson

Clas 3008 HISTORY OF ANCIENT ART. 4 credits, §Arth 3008, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60.

Architecture, sculpture, and painting of early cultures; influences contributing to the development of Western art. (No prereq. Meets concurrently with Arth 3008. Limited to a combined total of 50)

Winter Qtr, ★Sec 1, W, 6:20-8:50, FolH 306,
Cooper

Clas 3024 THE AGE OF SAINT AUGUSTINE OF HIPPO (363-C. 500 A.D.). 4 credits, §1024, tuition*: Resident \$294; Non-resident \$852.60.

See course description for Clas 1024. Additional reading of sources in translation for students in 3024. (Prereq soph. Meets concurrently with 1024)

Winter Qtr, Sec 1, T, 6:20-8:50, FolH 138,
Nicholson

Clas 3035 MYTHOLOGY IN WESTERN ART. 4 credits, §Arth 3035, tuition* (includes \$5 course fee): Resident \$299; Non-resident \$857.60.

Selected figures and events from Classical mythology as ancient artists first depicted them, and as they have appeared in later Western art. (No prereq. Meets concurrently with Arth 3035)

Spring Qtr, Sec 1, W, 1:30-4, Mpls Institute of
Arts, Auditorium, 2400 S. 3 Ave., McNally.

Offered through Continuing Education for Women

Clas 3089 INTRODUCTION TO BIBLICAL ARCHAEOLOGY. 4 credits, §5089, §ReIS 3089, 5089, tuition*: Resident \$294; Non-resident \$852.60.

Archaeological data relevant to the Jewish scriptures and the New Testament; major sites in the Holy Land and in other areas of the Mediterranean and the Near East. The evidence of pottery, inscriptions, manuscripts, and coins. Excavation methods. Archaeology as a tool for study of ancient religions. (No prereq. Meets concurrently with 5089, ReIS 3089, 5089)

Spring Qtr, Sec 1, T, 6:20-8:50, FolH 138,
Sellew

Clas 3145 GREEK AND ROMAN MYTHOLOGY II: ANALYSIS AND TRADITION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Methods of interpreting Greco-Roman myth, from Homer to Freud, Jung, and Levi-Strauss; artistic survival of classical myth in literature, painting, and music. (Prereq Clas 1042 or #)

Winter Qtr, Sec 1, M, 6:20-8:50, FolH 138,
Hershbell

Clas 3152 GREEK ART AND ARCHAEOLOGY. 4 credits, §Arth 3152, tuition*: Resident \$294; Non-resident \$852.60.

Architecture, sculpture, painting, and archaeology from 1050 B.C. to 31 B.C. (No prereq. Meets concurrently with Arth 3152)

Fall Qtr, Sec 1, W, 1:30-4, Mpls Institute of
Arts, Auditorium, 2400 S 3 Ave, McNally.

Offered through Continuing Education for Women

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Clas 5061 INTRODUCTION TO BYZANTINE CIVILIZATION. 4 credits, §1061, MeSt 5610, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for Clas 1061. Requires additional work for graduate credit. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 1061, MeSt 5610)

Fall Qtr, Sec 1, T, 6:20-8:50, FolH 138, Nicholson

Clas 5089 INTRODUCTION TO BIBLICAL ARCHAEOLOGY. 4 credits, §3089, ReIS 3089, 5089, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for Clas 3089. Requires additional work for graduate credit. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3089, ReIS 3089, 5089)

Spring Qtr, Sec 1, T, 6:20-8:50, FolH 138, Sella

Greek (Grk)

Grk 1101-1102-1103 BEGINNING CLASSICAL GREEK: INDIVIDUALLY PACED. 5 credits each quarter, tuition each quarter*: Resident \$350; Non-resident \$1015. (IS 1101)

Emphasis on developing reading ability and on reading real Greek as soon as possible. Students proceed at their own pace through a course of graded reading materials keyed to an accompanying grammar. Readings include selections from Plato, Aristophanes, Euripides, Demosthenes, Herodotus, and Homer. Class is divided into study groups which meet concurrently. Students in the study groups are encouraged to interact with each other and with the instructor in an informal and mutually supportive way. Examinations are taken when the student feels ready. *Courses meet concurrently each term.* (No prereq for 1101; 1101 or equiv for 1102; 1102 or equiv for 1103)

Fall Qtr, Sec 1, W, 6:20-8:50, FolH 218, Sheets

Winter Qtr, Sec 2, W, 6:20-8:50, FolH 214, Sheets

Spring Qtr, Sec 3, W, 6:20-8:50, FolH 214, Sheets

Greek, Modern (MdGk)

MdGk 1101-1102-1103 BEGINNING MODERN GREEK. 5 credits each quarter, §FSSP 3001-3002-3003, tuition each quarter*: Resident \$350; Non-resident \$1015. (IS 1101)

Speaking and reading demotic Greek. Pattern-practice drill, simple readings, some grammar. (No prereq for 1101; 1101 or equiv for 1102; 1102 or equiv for 1103. Meets concurrently with FSSP 3001-3002-3003)

Fall Qtr, 1101, Sec 1, Th, 6:20-8:50, BlegH 245, T Stavrou

Winter Qtr, 1102, Sec 1, Th, 6:20-8:50, BlegH 245, T Stavrou

Spring Qtr, 1103, Sec 1, Th, 6:20-8:50, BlegH 245, T Stavrou

MdGk 1104-1105-1106 INTERMEDIATE MODERN GREEK. 5 credits each quarter, §FSSP 3004-3005-3006, tuition each quarter*: Resident \$350; Non-resident \$1015.

A review of the fundamentals of syntax through a variety of readings from Modern Greek prose writers and poets. Provides additional grammatical elements which are reinforced through reading, conversation, and composition. *There must be 10 or more students enrolled in order for a section to be held.* (Prereq 1103 or equiv for 1104; 1104 or equiv for 1105; 1105 or equiv for 1106. Meets concurrently with FSSP 3004-3005-3006)

Fall Qtr, 1104, Sec 1, M, 6:20-8:50, SocSci 101, S Stavrou

Winter Qtr, 1105, Sec 1, M, 6:20-8:50, SocSci 101, S Stavrou

Spring Qtr, 1106, Sec 1, M, 6:20-8:50, SocSci 101, S Stavrou

Archaeological Fieldwork in Greece—Intensive fieldwork opportunities each summer in Bronze Age, Classical, and Medieval archaeology. For information, call the Global Campus at 625-3379.

Latin (Lat)

NOTE—Lat 1101 requires no previous knowledge of Latin.

Lat 1101-1102-1103 LATIN. 5 credits each quarter, tuition each quarter*: Resident \$350; Non-resident \$1015.

Fifteen college credits of Latin for all ages: junior high, senior high and college students, pre- and post-college adults, families—the learning community. Programmed texts and tapes for home study permit self-pacing. Knowledge is broken up into isolated bits, which students master bit by bit, returning to previous bits as necessary. 90% suc-

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

cess rate. Weekly discussions motivate learning, provide community, and explore humanistic educational dimensions of Classical Latin traditions. Students are divided into study groups, which meet one hour each week; the hour is arranged between 6:05 and 9:05 p.m. Tuesdays. The entire class will meet from 6:05 to 7:05 p.m. the first class each term, new students in 240, returning students in 246 FolH. *Courses meet concurrently each term and with 1104.* (No prereq for 1101; 1101 or # for 1102; 1102 or # for 1103)

Fall Qtr, 1101, Sec 1, T, FolH 218, 240, 344,
Sonkowsky

Fall Qtr, 1102, Sec 1, T, FolH 218, 240, 344,
Sonkowsky

Fall Qtr, 1103, Sec 1, T, FolH 218, 240, 344,
Sonkowsky

Winter Qtr, 1101, Sec 2, T, FolH 218, 240, 344,
Sonkowsky

Winter Qtr, 1102, Sec 2, T, FolH 218, 240, 344,
Sonkowsky

Winter Qtr, 1103, Sec 2, T, FolH 218, 240, 344,
Sonkowsky

Spring Qtr, 1101, Sec 3, T, FolH 218, 240, 344,
Sonkowsky

Spring Qtr, 1102, Sec 3, T, FolH 218, 240, 344,
Sonkowsky

Spring Qtr, 1103, Sec 3, T, FolH 218, 240, 344,
Sonkowsky

Lat 1101-1102-1103 LATIN. 5 credits each quarter, tuition each quarter*: Resident \$350; Non-resident \$1015. (IS)

Each of the following sections is offered via interactive television between two sites, with students at both locations. Basic grammar and vocabulary, practice in reading and writing Latin, workbook exercises, easy Latin readings and Roman legends. Weekly class sessions motivate learning, provide community, and explore humanistic dimensions of classical Latin traditions. Text materials permit self-pacing, but students will complete an assigned body of materials each quarter. 1103 will include a review of learned elements with a shift of emphasis to longer passages of continuous reading. (No prereq for 1101; 1101 or # for 1102; 1102 or # for 1103)

Fall Qtr, 1101, Sec 4, MW, 4:30-5:30, RarigC,
5th floor, Studio C, Sonkowsky

Winter Qtr, 1102, Sec 4, MW, 4:30-5:30,
RarigC, 5th floor, Studio C, Sonkowsky

Spring Qtr, 1103, Sec 4, MW, 4:30-5:30,
RarigC, 5th floor, Studio C, Sonkowsky

Lat 1104 LATIN READINGS: CAESAR. 5 credits, tuition*: Resident \$350; Non-resident \$1015. (IS)

Reading in Book I of Julius Caesar's masterpiece *The Gallic Wars*. Weekly one-hour study groups on Tuesdays arranged between 6:05 and 9:05 p.m. The entire class will meet from 6:05 to 7:05 p.m. the first class each term. Meets concurrently with 1101-1102-1103. (Prereq 1103 or #)

Fall Qtr, Sec 1, T, FolH 218, 240, 344,
Sonkowsky

Winter Qtr, Sec 2, T, FolH 218, 240, 344,
Sonkowsky

Spring Qtr, Sec 3, T, FolH 218, 240, 344,
Sonkowsky

Clinical Laboratory Science (CLS)

(D-242 Mayo: 625-9171)

Medical School

(See also Public Health)

Textbooks for most CLS courses are available in the Health Sciences Bookstore (625-1500).

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Clinical Laboratory Science. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Communication Disorders (CDis)

(115 Shevlin Hall: 624-3322)

College of Liberal Arts

Textbooks for most CDIs courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Robert H. Brookshire, Professor
Linda R. Hinderscheit, Associate Clinical Specialist
Julie M. Liss, Assistant Professor
Karlind T. Moller, Professor of Human and Oral
Genetics and Communication Disorders
Joe E. Reichle, Professor
Clark D. Starr, Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in CDIs. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

CDIs 5102 COMMUNICATION PROBLEMS OF ADULTS. 3 credits, tuition*: Resident \$220.50; Non-resident \$639.45; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Problems of hearing, speech, language, and voice in adults for persons interested in human communication. Implications for familial, social, academic, and vocational adjustments. (Prereq non-Speech and Hearing Science major. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ○Sec 1, M, 4:30-6:30 (plus 1 hour/week arranged), FolH 340, Starr

CDIs 5507 CLEFT PALATE, ORAL-FACIAL ANOMALIES AND SPEECH. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Relationships between oral-facial structures and speech. Emphasis on speech problems associated with dental and palatal anomalies and on their clinical management. Observations of clinical activities. (Prereq 5304, 5504 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ○Sec 1, MW, 4:15-6, FolH 340, Starr, Moller

CDIs 5509 MOTOR SPEECH DISORDERS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Nature, assessment, and treatment of motor speech disorders in adult and pediatric populations. (Prereq 5304 or ¶5304. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ○Sec 1, Th, 4:40-7:40 (plus 1 hour/week arranged), FolH 340, Liss

CDIs 5606 LANGUAGE ASSESSMENT, INTERVENTION—EARLY STAGES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Analysis of the communication disorders in pre-school age children with special emphasis on the assessment and management of language disorders observed in children with developmental disabilities

as well as intellectually normal children. (Prereq 5305 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ○Sec 1, M, 3:35-6:35 (plus 1 hour/week arranged), BuH 120, Reichle

CDIs 5608 LANGUAGE ASSESSMENT, INTERVENTION—ADULTS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Analysis of language disorders in adolescent and adult populations with special emphasis on assessment and intervention strategies applicable to aphasia and other neurogenic disorders. (Prereq 5302 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ○Sec 1, TTh, 5-6:45, FolH 340, Brookshire

CDIs 5900 TOPICS IN COMMUNICATION DISORDERS: CLINICAL ISSUES AND PROCEDURES. 2 credits, tuition*: Resident \$147; Non-resident \$426.30; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Designed to acquaint students in speech-language pathology and audiology with issues and procedures that are relevant and necessary for good clinical practice. Although the course will focus primarily on the implementation of Public Law 94-142, procedures relevant to noneducational settings also will be addressed. The importance of inter-agency collaboration will be stressed. (Prereq senior or graduate student status. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ○Sec 1, TTh, 3:35-4:25, FolH 340, Hinderscheit

CDIs 5900 TOPICS IN COMMUNICATION DISORDERS: COMMUNICATIVE APPROACHES TO CHALLENGING BEHAVIOR IN PERSONS WITH SEVERE DEVELOPMENTAL DISABILITIES. 3 credits, tuition*: Resident \$220.50; Non-resident \$639.45; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Designed to identify and critique best practices that provide positive treatment alternatives for individuals who engage in socially motivated aggression, self injury, tantrumming, and other forms of challenging

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

behavior. A large proportion of instructional procedures addressed in this course will focus on establishing more efficient communicative repertoires that serve the same function as existing challenging behaviors. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, Sec 2, M, 3:35-6:35, BuH 123,
Reichle

Comparative Studies in Discourse and Society (CSDS)

See Cultural Studies and Comparative Literature, page 122.

Compleat Scholar

(See page 367)

Composition and Communication (Comp)

(306 Lind Hall: 625-2888)
College of Liberal Arts

Textbooks for most Comp courses are available at the Minnesota Book Center in Williamson Hall (625-6000). See textbook note below.

(See also English; General College; Rhetoric; and The Compleat Scholar noncredit Writing courses)

Composition Requirements for Degree Programs. Since September 1982, the College of Liberal Arts and most other colleges of the University have required all students to satisfy the Writing Practice requirement and take one or more upper division courses (Comp 30xx) in their junior or senior year.

Refresher courses. Students who feel the need for a refresher course before enrolling in Comp 1011 are encouraged to take courses from the General College if they feel their background in structure or grammar is insufficient, or American Studies 1001, 1002, 1003, American Life, if they feel their reading background has been neglected. Rhetoric 1160, College Reading, and LASK 1001, *Becoming a Master Student*, may also be useful.

Transfer and continuing students. Students who have passed one or more composition courses at another university may be exempt from the Writing Practice requirement. They should contact the Continuing Education and Extension Counseling Office, 314 Nolte Center, 625-2500, for information as to their proper choice of courses.

Students who have passed Comp 1001 and Comp 1002, or Comm 1001 and Comm 1002 under previously existing requirements are probably exempt from further lower division composition courses unless their major department had an additional requirement when they began work at the University.

Continuing students who have passed Comp 1001 or Comm 1001, but not the second course, should either take Comp 1027 or an appropriate upper level (3xxx) course to complete their requirement.

International students. Students whose native language is not English should go to Klaeber Court 175 for information; contact Sheryl Holt, Coordinator of Composition for Non-Native Speakers of English, 624-4524.

Exemptions. Students with exceptionally high skills in English may earn exemption from the Writing Practice requirement. Students interested in this alternative should contact CEE Counseling, 314 Nolte Center, 625-2500.

ATTENDANCE: Students absent from the first day of classes in any Composition course may lose their place in the course unless they have contacted their instructor prior to the first class meeting.

REGISTRATION AFTER FIRST CLASS MEETING: Students who wish to register in a Comp course that has already met must secure the written permission of the instructor in order to register. Students who register without securing written permission may be canceled from the class without notice.

Textbooks. Because different instructors require different texts, even for different sections of the same course, students should attend class before buying books for Composition courses.

Note: Comp 0002C (Grammar and Usage Review), 0003C (Review of Business English), 0004C (Business Correspondence), and 0006C (Basic Technical Writing) are no longer being offered through Composition and Communication. Students interested in noncredit introductory writing courses should see the Communication Skills listing of the General College section of this Bulletin, page 202.

Continuing Education for Women (CEW) section available in the following course: Comp 1011

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Computer-assisted Comp sections

Certain sections of Comp 3031 and 3032 make use of computer-assisted instruction and require a \$30 course fee in addition to regular tuition charges. These sections are identified with each course following the listing of regular course sections.

The computer laboratories are located in 26 Lind Hall, where there are both IBM and Macintosh computers. Instruction in the lab during class hours involves drafting, revising, and special exercises. Previous word processing and typing experience is not essential. Students who have paid \$40 for the regular campus-wide computer access card should check on having the course fee waived.

Comp 1011 WRITING PRACTICE I. 5 credits, tuition*: Resident \$350; Non-resident \$1015. (IS) Provides guided practice in solving writers' problems through recitation, in-class workshops, and individual conferences. Writing assignments focus on defining purpose, organizing and developing content, analyzing audiences, drafting the whole essay and its parts, and revising and editing so as to master the fundamentals of expository structure and style. After first day of class, consent of instructor is required. (No prereq. Limited to 25)

The Writing Practice requirement is fulfilled by successful completion of Comp 1011. Students whose work does not meet an acceptable standard in 1011 will receive a continuation grade ("X"), and will take Comp 1013 to complete the requirement.

Minneapolis Campus (Including MacPhail Center)

- Fall Qtr, ★Sec 1, M, 6:20-9:10, LindH 340
- Fall Qtr, ★Sec 2, T, 6:20-9:10, LindH 320
- Fall Qtr, ★Sec 3, T, 6:20-9:10, LindH 315
- Fall Qtr, ★Sec 4, W, 1-3:50, MacP Annex 1 (1128 LaSalle, downtown Mpls). Offered through Continuing Education for Women
- Fall Qtr, ★Sec 5, W, 6:20-9:10, AmundH 158
- Fall Qtr, ★Sec 6, W, 6:20-9:10, AmundH 156
- Fall Qtr, ★Sec 7, Th, 6:20-9:10, LindH 315
- Fall Qtr, ★Sec 8, Th, 6:20-9:10, LindH 303
- Winter Qtr, ★Sec 9, M, 6:20-9:10, LindH 315
- Winter Qtr, ★Sec 10, T, 6:20-9:10, AmundH 120
- Winter Qtr, ★Sec 11, T, 6:20-9:10, AmundH 124
- Winter Qtr, ★Sec 12, W, 6:20-9:10, KoltH S137
- Winter Qtr, ★Sec 13, Th, 6:20-9:10, LindH 320
- Spring Qtr, ★Sec 14, M, 6:20-9:10, LindH 303
- Spring Qtr, ★Sec 15, M, 6:20-9:10, KoltH S137
- Spring Qtr, ★Sec 16, T, 6:20-9:10, KoltH S135
- Spring Qtr, ★Sec 17, T, 6:20-9:10, KoltH S132

Roseville Area High School

Spring Qtr, ★Sec 18, W, 6:20-9:10, room 143

Richfield High School

Fall Qtr, ★Sec 19, W, 6:20-9:10, room 241

Comp 1013 WRITING PRACTICE II. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Designed for students who have recently completed Comp 1011. Intensive work on individual writing problems. Highly individualized workshops and conferences. Students who need this course must contact the Composition office (625-2888) before registering. (Prereq grade of X in 1011. A joint Day/Extension class limited to 18 Extension students)

Fall Qtr, ★○Sec 1, Arr
 Winter Qtr, ★○Sec 2, Arr
 Spring Qtr, ★○Sec 3, Arr

Comp 1027 INTERMEDIATE EXPOSITORY WRITING. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Focuses on the range of choices writers make based on audience, purpose, and context. Relies on critical reading and a variety of written assignments to improve students' control over their writing and the effect it will have on their intended audiences. (Prereq completion of the Writing Practice requirement, or Comp 1001 or Comm 1001; sophomore standing is recommended. Limited to 25)

Fall Qtr, ★Sec 1, W, 6:20-8:50, KoltH S137
 Winter Qtr, ★Sec 2, T, 6:20-8:50, KoltH S137
 Spring Qtr, ★Sec 3, T, 6:20-8:50, KoltH S138

Comp 3011-3033 Upper Division Writing Courses—Completion of one of these courses (4 cr) (with the exception of Comp 3022) fulfills the "upper division composition requirement" as defined by the student's major department. Some colleges or departments require more than one upper division course. Completion of the Writing Practice requirement or its equivalent is prerequisite for all of these courses. Students should have declared a major, and are advised not to take the course until they have completed 90 credits (with the exception of Comp 3022 and 3033, which require 60 or more credits). The Composition Office has a list of which courses are required or recommended for each degree program.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Comp 3011 WRITING ABOUT LITERATURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Primary focus on presenting the active reading of literary works (poems, plays, fiction) in literary commentary and criticism, primarily for academic audience. Use of secondary sources, and attention to various theoretical and critical approaches. (Prereq the Writing Practice requirement or equivalent. Limited to 20)

Fall Qtr, ★Sec 1, W, 6:20-8:50, LindH 320

Comp 3012 WRITING IN THE HUMANITIES. 4 credits, tuition*. Total: Resident \$294; Non-resident \$852.60.

Writing on topics where historical and multicultural perspectives are brought together in the context of these disciplines. Assignments involve integrating primary texts with critical commentary. Frequent practice in presenting primary materials through paraphrase and summary. (Prereq the Writing Practice requirement or equivalent. Limited to 20)

Spring Qtr, ★Sec 1, T, 6:20-8:50, AmundH 116

Comp 3013 WRITING FOR THE ARTS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Writing in the roles of artist, member of the audience, and critic to balance subjective responses and academic analysis. Emphasis on the importance of writing to create and maintain the arts communities through grants, reviews, and formal criticism. (Prereq the Writing Practice requirement or equivalent. Limited to 20)

Winter Qtr, ★Sec 1, Th, 6:20-8:50, LindH 315

Spring Qtr, ★Sec 2, Th, 6:20-8:50, LindH 315

Comp 3014 WRITING IN THE SOCIAL SCIENCES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Emphasizes writing as a way to communicate knowledge about individual and collective human behavior. Multidisciplinary perspectives on common social issues, description and analysis of quantitative data. Assignments may include the literature review, research proposal, case study, and theoretical argument. (Prereq the Writing Practice requirement or equivalent. Limited to 20)

Fall Qtr, ★Sec 1, M, 6:20-8:50, LindH 320

Fall Qtr, ★Sec 2, M, 6:20-8:50, LindH 303

Fall Qtr, ★Sec 3, W, 6:20-8:50, LindH 303

Winter Qtr, ★Sec 4, T, 6:20-8:50, LindH 303

Winter Qtr, ★Sec 5, T, 6:20-8:50, LindH 315

Winter Qtr, ★Sec 6, Th, 6:20-8:50, LindH 325

Spring Qtr, ★Sec 7, M, 6:20-8:50, LindH 340

Spring Qtr, ★Sec 8, Th, 6:20-8:50, LindH 303

Spring Qtr, ★Sec 9, Th, 6:20-8:50, LindH 320

Comp 3015 WRITING ABOUT SCIENCE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Emphasizes awareness of the close connection between writing and the practice of science. Through descriptive papers, scientific papers, grant proposals, literature reviews, response papers and other projects, students will learn how language functions in a variety of scientific contexts. (Prereq the Writing Practice requirement or equivalent. Limited to 20)

Spring Qtr, ★Sec 1, M, 6:20-8:50, LindH 315

Comp 3022 CRITICAL READING AND WRITING FOR MANAGEMENT. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Strategies and conventions for writing in management and related fields. Improvement of communication skills through the incorporation of narrative, descriptive, analytical and persuasive techniques into writing on current business topics, with an emphasis on critical reading, thinking, and writing. Strategies for communicating among varied audiences in business settings. *This course is the first of two courses required by the Carlson School of Management. It does not fulfill the upper-division composition requirement as defined by most majors in the College of Liberal Arts.* (Prereq the Writing Practice requirement or equivalent. Limited to 20)

Fall Qtr, ★Sec 1, T, 6:20-8:50, LindH 303

Winter Qtr, ★Sec 2, W, 6:20-8:50, LindH 303

Winter Qtr, ★Sec 3, W, 6:20-8:50, LindH 320

Spring Qtr, ★Sec 4, Th, 6:20-8:50, KoltH S138

Comp 3027 ADVANCED EXPOSITORY WRITING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Designed for already competent writers, this course focuses on the production of polished writing within and beyond the university setting. Teaches effective argumentation through critical reading and awareness of context and audience. (Prereq the Writing Practice requirement or equivalent. Limited to 20)

Fall Qtr, ★Sec 1, T, 6:20-8:50, LindH 325

Fall Qtr, ★Sec 2, T, 6:20-8:50, Arch 15

Fall Qtr, ★Sec 3, W, 6:20-8:50, AmundH 104

Winter Qtr, ★Sec 4, T, 6:20-8:50, LindH 325

Winter Qtr, ★Sec 5, T, 6:20-8:50, KoltH S132

Spring Qtr, ★Sec 6, M, 6:20-8:50, LindH 325

Spring Qtr, ★Sec 7, M, 6:20-8:50, LindH S138

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Comp 3031 TECHNICAL WRITING FOR ENGINEERS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Presenting technical information accurately and clearly with attention to the rhetorical and organizational contexts of the writing. Analysis of writing situations, style and form of technical reports, and collaborative written and spoken presentations. (Prereq the Writing Practice requirement or equivalent. Limited to 20)

Fall Qtr, ★Sec 1, M, 6:20-8:50, LindH 315
 Fall Qtr, ★Sec 2, T, 6:20-8:50, KoltH S132
 Winter Qtr, ★Sec 3, W, 6:20-8:50, LindH 325
 Spring Qtr, ★Sec 4, T, 6:20-8:50, LindH 315
 Spring Qtr, ★Sec 5, T, 6:20-8:50, AmundH 124

Comp 3031 Computer-Assisted Sections (includes \$30 course fee): Resident \$324; Non-resident \$882.60. (IS)

Winter Qtr, 3031, ★Sec 6, T, 6:20-8:50, LindH 320
 Spring Qtr, 3031, ★Sec 7, Th, 6:20-8:50, KoltH S132

Comp 3032 PRE-PROFESSIONAL WRITING FOR BUSINESS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Writing for the wide variety of situations and audiences found in business. Form and style of business writing in collaborative and individual assignments. Assignments and practical examples tied as much as possible to students' major fields. *This is the second of two courses required by the Carlson School of Management.* (Prereq the Writing Practice requirement or equivalent and written #. Limited to 20)

Winter Qtr, ★Sec 1, W, 6:20-8:50, RarigC 610, Rinehart
 Spring Qtr, ★Sec 2, M, 6:20-8:50, LindH 320
 Spring Qtr, ★Sec 3, W, 6:20-8:50, RarigC 616

Comp 3032 Computer-Assisted Sections (includes \$30 course fee): Resident \$324; Non-resident \$882.60.

Fall Qtr, 3032, ★Sec 4, W, 6:20-8:50, LindH 325
 Winter Qtr, 3032, ★Sec 5, W, 6:20-8:50, AmundH 158

(See related courses in General College; and Rhetoric)

Comp 3033 WRITING FOR THE HEALTH SCIENCES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Addresses the writing needs of students from the diverse fields of the Health Sciences. Primary emphasis on practicing and achieving verbal clarity in a variety of situations ranging from precise description of a clinical procedure to balanced discussion of

ethical contexts. (Prereq the Writing Practice requirement or equivalent. Limited to 20)

Fall Qtr, ★Sec 1, Th, 6:20-8:50, KoltH S135
 Winter Qtr, ★Sec 2, W, 6:20-8:50, KoltH S134
 Spring Qtr, ★Sec 3, T, 6:20-8:50, AmundH 156
 Spring Qtr, ★Sec 4, T, 6:20-8:50, KoltH S133

Comp 3065 EDITORIAL PRACTICE. 4 credits, (maximum 12 cr, no topic can be repeated), tuition*: Resident \$294; Non-resident \$852.60.

Introduces fundamental elements of editorial work, especially the evaluation of manuscripts; attention is paid to "in-house" publications, such as newsletters. Survey of copy editing (making manuscripts clear and concise), substantive editing (working with content), and layout and design. Students hear guest lectures, participate in group editing projects, and present a report on some aspect of editing. *This course does not fulfill the upper-division composition requirement as defined by most majors.* (No prereq. Limited to 25)

Spring Qtr, ★Sec 1, T, 6:20-9:10, LindH 303
 (See also CSch 0356, Introduction to Copyediting)

Comp 3085 CONFERENCE COURSE IN ADVANCED COMPOSITION. 4 credits, tuition* (includes \$40 special fee): Resident \$334; Non-resident \$892.60.

Individual writing conferences scheduled at student's and instructor's convenience. Interested students must contact the Composition Office (306 Lind Hall, 625-2888), and submit a brief written outline of the project in order to be approved for registration. *This course may not fulfill the upper-division composition requirement as defined by some majors; check with your college office before registering.* (Prereq the Writing Practice requirement or equivalent and written #)

Fall Qtr, Sec 1, Arr
 Winter Qtr, Sec 2, Arr
 Spring Qtr, Sec 3, Arr

Computer Science (CSci)

(4-192 Electrical Engineering/Computer Science Building: 625-4002)

Institute of Technology

Textbooks for most CSci courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also General College; Information and Decision Sciences; and CSch 0576, A Look at the Supercomputer and Its Uses: A Machine for the Information Age)

Your attention is called to the Undergraduate Development Certificate in Computer Science, 45

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

and 90 credits, page 492; and Computer Science degree, below.

Daniel Boley, Associate Professor
John Carlis, Associate Professor
David Du, Professor
Deng-Zhu Du, Associate Professor
David Fox, Professor
Maria Gini, Associate Professor
Ravi Janardan, Associate Professor
Vipin Kumar, Associate Professor
John Riedl, Assistant Professor
Shashi Shekhar, Assistant Professor
Jaideep Srivastava, Assistant Professor
Marvin L. Stein, Professor
Anand Tripathi, Associate Professor

A Bachelor of Arts (B.A.) with a major in computer science offered through the College of Liberal Arts can be completed during the evening.

The following is a partial list of the course requirements common to both the B. Comp. Sci. (Institute of Technology) and the B.A. (College of Liberal Arts).

Required Preparatory Courses

Math 1251-1252, 1261, and Math 3251, 3261; Stat 3091 or 5121 for students intending to take additional work in statistics

Major Requirements

CSci 3311, 3316, 3317, 3321, 3322, 3327, 5102, 5106, 5201, 5301, 5400

Substitutes

Students may use the following approved substitutes for their computer science degree or certificate programs: CSci 3400 for CSci 3311, CSci 3106 for CSci 3316, CSci 3105 for CSci 3321, CSci 3107 or 5101 for CSci 3327, CSci 5121 for CSci 3322

Students are referred to the Institute of Technology Bulletin or the College of Liberal Arts Bulletin for specifics on additional requirements.

Permission of the department is required for admission to the major. For additional information, contact CEE Counseling, 625-2500.

Computer Science mathematics prerequisites in the Institute of Technology and the College of Liberal Arts

The entrance requirement for the Institute of Technology and the College of Liberal Arts and the prerequisite for Math 1251 is 4 years of high school mathematics including solid geometry and trigonometry. Any student who meets this requirement is eligible to register for Math 1251. However, if it has been two years or more since last taking a mathematics course, the student is strongly advised to register for Math 1201 or possibly GC 0631. A student who has completed GC 0631 or its equivalent (higher algebra) in high school or college (not a trade school) within the last 2 years may register for Math 1201. GC 0631 and Math 1201 take the place of the junior and senior mathematics courses in high school. If you need assistance in determining math placement, please contact a CEE adviser at 625-2500.

(See also business and mathematics under General College; and Operations and Management Science)

Computer Cards—Students who do not have access to a computer will be expected to pay a user fee of \$40 a quarter for courses that have a formal or an informal laboratory. Check with your instructor on computer requirements if you are considering using a computer of your own. Computer cards are not available until the second week of in-person registration. Payment must be made with a separate check (do not add the computer charge to your tuition check). For information, call the registration office, 101 Westbrook Hall, at 625-3333.

CSci 3101 A FORTRAN INTRODUCTION TO COMPUTER PROGRAMMING. 4 credits, \$1100-1101, tuition* plus \$6 special fee. Total: Resident \$336; Non-resident \$963.

Algorithm development and the principles of computer programming using the Fortran language, emphasizing numerical methods for science and engineering applications. Integral open laboratory. (Prereq 1 qtr calculus. Limited to 60)

Fall Qtr, ★Sec 1, Lect, M, 6:10-8:40, EE/CSci 3230; Lab, W, 6:10-7:30, EE/CSci 3230

Spring Qtr, ★Sec 2, Lect, M, 6:10-8:40, EE/CSci 3230; Lab, W, 6:10-7:30, EE/CSci 3230

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

CSci 3102 INTRODUCTION TO PASCAL PROGRAMMING. 4 credits, tuition*: Resident \$330; Non-resident \$957.

PASCAL computer language, applications, programming techniques. Designed to bring students to advanced-level competence in PASCAL programming. (Prereq non-CSci major, Math 1111 or equivalent or 1201 or #. Limited to 60)

Winter Qtr, ★Sec 1, Lect, M, 6:10-8:40, AmundH 116; Lab, W, 6:10-7:30, AmundH 116

CSci 3113 INTRODUCTION TO PROGRAMMING IN C. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Intensive introduction to syntax and semantics of the C language, with introduction to UNIX tools for implementing C programs. Students will write programs, use de-bugging aids, and build libraries. (Prereq 3101 or 3102 or any programming experience and precalculus or #. Limited to 60)

Fall Qtr, ★Sec 1, W, 6:10-8:40, EE/CSci 3210

Fall Qtr, ★Sec 2, W, 6:10-8:40, EE/CSci 3210

Winter Qtr, ★Sec 3, W, 6:10-8:40, EE/CSci 3210

Winter Qtr, ★Sec 4, W, 6:10-8:40, EE/CSci 3210

Spring Qtr, ★Sec 5, W, 6:10-8:40, EE/CSci 3210

Spring Qtr, ★Sec 6, W, 6:10-8:40, EE/CSci 3210

CSci 3121 SURVEY OF DATA STRUCTURES AND ALGORITHMS. 4 credits, §3105, 3321, tuition*: Resident \$330; Non-resident \$957.

The fundamental structures of computer science are introduced, including induction, mathematical analysis of computational complexity, and the definition and implementation of selected data structures along with their fundamental operations. Students will implement some of these data structures in computer programs. (Prereq 3102 or 3113 or #. Limited to 60)

Spring Qtr, ★Sec 1, Th, 6:10-8:40, EE/CSci 3210

CSci 3311 DISCRETE STRUCTURES OF COMPUTER SCIENCE. 4 credits, §3400, tuition*: Resident \$330; Non-resident \$957.

Mathematical techniques and structures needed in Computer Science. Topics include formal logic, elementary combinatorics, induction, recurrences, relations and graphs. (Prereq 1 qtr calculus or #. Limited to 60)

Fall Qtr, ★Sec 1, Lect, Th, 6:10-8:40, EE/CSci 3230; Lab, T, 6:10-7:30, EE/CSci 3230

Spring Qtr, ★Sec 2, Lect, T, 6:10-8:40, MechE 108; Lab, Th, 6:10-7:30, MechE 108, Stein

CSci 3316 THE STRUCTURE OF COMPUTER PROGRAMMING I. 4 credits, §3106, tuition*: Resident \$330; Non-resident \$957.

Different programming paradigms as a formal way of expressing computer algorithms and data. Procedures, recursion, and iteration as algorithmic development techniques. Use of abstraction and of modularity. The language Scheme is used for illustration of ideas and lab problems. (Prereq 1 qtr calculus or #. Limited to 60)

Fall Qtr, ★Sec 1, Lect, M, 6:10-8:40, MechE 108; Lab, W, 6:10-7:30, MechE 108

Winter Qtr, ★Sec 2, Lect, T, 6:10-8:40, EE/CSci 3111; Lab, Th, 6:10-7:30, EE/CSci 3111

CSci 3317 THE STRUCTURE OF COMPUTER PROGRAMMING II. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Advanced programming paradigms. Object-oriented programming, logic programming, and pattern matching are illustrated with examples. Generic operators, local variables, and objects as ways of encapsulating different conceptual parts of a program. The language Scheme is used for illustration of ideas and lab programs. (Prereq 3316 or #. Limited to 60)

Winter Qtr, ★Sec 1, Lect, T, 6:10-8:40, MechE 108; Lab, Th, 6:10-7:30, MechE 108

Spring Qtr, ★Sec 2, Lect, T, 6:10-8:40, AkerH 309; Lab, Th, 6:10-7:30, AkerH 309

CSci 3321 ALGORITHMS AND DATA STRUCTURES I. 4 credits, §3105, 3121, tuition*: Resident \$330; Non-resident \$957.

Fundamental data structures with some of the rudimentary computer algorithms are introduced. Students will implement these data structures and their operations as abstract data types. The course includes a study of C++ with emphasis on implementation of data types and control structures. (Prereq 3311 or 3400, 3316 or 3106, or #. Limited to 60)

Spring Qtr, ★Sec 1, Lect, M, 6:10-8:40, MechE 108; Lab, W, 6:10-7:30, MechE 108

CSci 3322 ALGORITHMS AND DATA STRUCTURES II. 4 credits, §5121, tuition*: Resident \$330; Non-resident \$957.

Fundamental paradigms for algorithm design with the supporting data structures. Complexity, correctness analysis, and lower bound theory. Implementation of selected algorithms and data structures using C++ language. (Prereq 3321. Meets concurrently with 5121. Limited to a combined total of 100)

Fall Qtr, ★Sec 1, Lect, Th, 6:10-8:40, MechE 108, 102, Srivastava; Lab, T, 6:10-7:30, MechE 108, 102

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

CSci 3327 INTRODUCTION TO THE ORGANIZATION OF COMPUTER SYSTEMS. 4 credits, §3107, 5101, tuition*: Resident \$330; Non-resident \$957.

Organization of hardware and software systems that support computer programming and program execution. Symbolic assembly language to study the mapping of application programs and data into the underlying hardware. Ideas illustrated in assembly language programs (currently Motorola 680x0). (Prereq 3316 or 3121 or #. Meets concurrently with 5101. Limited to a combined total of 100)

Fall Qtr, ★Sec 1, Lect, Th, 6:10-8:40, MechE 212, Stein; Lab, T, 6:10-7:30, MechE 212

CSci 5101 STRUCTURE AND PROGRAMMING OF SOFTWARE SYSTEMS I. 4 credits, §3107, 3327, tuition* (includes \$6 special fee): Resident \$336; Non-resident \$964; Resident Graduate credit \$402; Non-resident Graduate credit \$798; Resident Graduate School credit \$690; Non-resident Graduate School credit \$1374.

See course description for CSci 3327. (Prereq non-CSci major, 3316 or 3121 or #. Qualified students who are **nonmajors** may register for graduate credit at the University of Minnesota. Meets concurrently with 3327. Limited to a combined total of 100)

Fall Qtr, ★Sec 1, Lect, Th, 6:10-8:40, MechE 212, Stein; Lab, T, 6:10-7:30, MechE 212

CSci 5102 STRUCTURE AND PROGRAMMING OF SOFTWARE SYSTEMS II. 4 credits, tuition* (includes \$6 special fee): Resident \$336; Non-resident \$964; Resident Graduate credit \$402; Non-resident Graduate credit \$798; Resident Graduate School credit \$690; Non-resident Graduate School credit \$1374.

Extension of basic machine architecture and the principles of system programming; closed subroutines; parameter passing mechanisms; macros and conditional assembly; input-output; assembly linking and loading; dynamic resource allocation; introduction to operating systems, job control language, and processes. Informal laboratory. (Prereq 3107 or 5101 or 3327 or #. Qualified students who are **nonmajors** may register for graduate credit at the University of Minnesota. Limited to 60)

Winter Qtr, ★Sec 1, Th, 6:10-8:40, EE/CSci 3230

CSci 5104 SYSTEM SIMULATION: LANGUAGES AND TECHNIQUES. 4 credits, tuition* (includes \$6 special fee): Resident \$336; Non-resident \$964; Resident Graduate credit \$402; Non-resident Graduate credit \$798; Resident Graduate School credit \$690; Non-resident Graduate School credit \$1374.

Methodologies relevant to system modeling and simulation. Application of stochastic processes, Markov chains, and queuing theory to developing system models and simulation experiments. Data collection and statistical analysis of output. Fundamentals of discrete event-based simulations using digital computers. Discussion of simulation languages, both process- and event-oriented, including SIMULA and SIMPAS. Applications of these techniques to job shops, operations research, and modeling of computer and communications systems. Informal lab. (Prereq 3327 or 5101, Stat 3091 or #. Qualified students who are **nonmajors** may register for graduate credit at the University of Minnesota. Limited to 60)

Winter Qtr, ★Sec 1, W, 6:10-8:40, EE/CSci 3230

CSci 5106 STRUCTURE OF HIGHER LEVEL LANGUAGES. 4 credits, tuition* (includes \$6 special fee): Resident \$336; Non-resident \$964; Resident Graduate credit \$402; Non-resident Graduate credit \$798; Resident Graduate School credit \$690; Non-resident Graduate School credit \$1374.

Formal definition of the syntax and semantics of programming languages; semantics both by means of interpreters and by using the axiomatic approach. Concepts underlying programming languages and their implementations in a selected group of languages. Program description at compile time and execution time. (Prereq 5102 and 3322 or 5121 or #. Qualified students who are **nonmajors** may register for graduate credit at the University of Minnesota. Limited to 60)

Winter Qtr, ★Sec 1, W, 6:10-8:40, EE/CSci 3115, Shekhar

CSci 5121 ALGORITHMS AND DATA STRUCTURES II. 4 credits, §3322, tuition* (includes \$6 special fee): Resident \$336; Non-resident \$964; Resident Graduate credit \$402; Non-resident Graduate credit \$798; Resident Graduate School credit \$690; Non-resident Graduate School credit \$1374.

See course description for CSci 3322. (Prereq non-CSci majors only, 3106 or 3321 or #. Open for graduate credit only to **nonmajors**. Meets concurrently with 3322. Limited to a combined total of 100)

Fall Qtr, ★Sec 1, Lect, Th, 6:10-8:40, MechE 102, 108, Srivastava; Lab, T, 6:10-7:30, MechE 102, 108

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

CSci 5122 ADVANCED DATA STRUCTURES. 4 credits, tuition* (includes \$6 special fee): Resident \$336; Non-resident \$964; Resident Graduate credit \$402; Non-resident Graduate credit \$798; Resident Graduate School credit \$690; Non-resident Graduate School credit \$1374.

Internal and external sorting. Symbol tables. Optimal binary search trees. AVL trees. B-Trees. Tries. Hashing. Files and Indexes, ISAM, multilists, inverted files, cellular partitions, differential files. (Prereq 5121 or 3322 or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 60)

Winter Qtr, ★Sec 1, Th, 6:10-8:40, EE/CSci 3115, Janardan

CSci 5151 INTRODUCTION TO PARALLEL COMPUTING I. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Parallel computing: programming techniques, algorithms, data structures. Evaluation of algorithm quality. Effectiveness and scalability. Basic concepts and algorithms for parallel computation. (Prereq 3121 or 3322. Qualified students may register for graduate credit at the University of Minnesota. Limited to 60)

Fall Qtr, ★Sec 1, W, 6:10-8:40, EE/CSci 3115, Kumar

CSci 5201 COMPUTER ARCHITECTURE. 4 credits, tuition* (includes \$6 special fee): Resident \$336; Non-resident \$964; Resident Graduate credit \$402; Non-resident Graduate credit \$798; Resident Graduate School credit \$690; Non-resident Graduate School credit \$1374.

Elementary computer architecture, gates and digital logic, register transfers and micro-operations, processor studies of existing systems. (Prereq 3311 or 3400, 3107 or 5101 or 3327 or #. Open for graduate credit only to **nonmajors**. Limited to 60)

Spring Qtr, ★Sec 1, T, 6:10-8:40, EE/CSci 3230

CSci 5211 DATA COMMUNICATIONS AND COMPUTER NETWORKS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Network classification and services. Hardware components: multiplexors, concentrators, communications media. Network protocols and architectures. Research areas. Informal laboratory. (Prereq 5102 or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 60)

Spring Qtr, ★Sec 1, W, 6:10-8:40, EE/CSci 3115, David Du

CSci 5301 NUMERICAL ANALYSIS. 4 credits, tuition* (includes \$6 special fee): Resident \$336; Non-resident \$964; Resident Graduate credit \$402; Non-resident Graduate credit \$798; Resident Graduate School credit \$690; Non-resident Graduate School credit \$1374.

Floating point arithmetic and rounding errors. Iterative methods. Numerical solution of nonlinear equations. Newton's method. Direct methods for linear systems of equations. Gaussian elimination. Factorization methods. Interpolation and approximation. Numerical integration and differentiation. Introduction to numerical solution of ordinary differential equations. Informal laboratory. (Prereq Math 3321 or #; a knowledge of Pascal or FORTRAN is assumed. Qualified students who are **nonmajors** may register for graduate credit at the University of Minnesota. Limited to 60)

Fall Qtr, ★Sec 1, T, 6:10-8:40, EE/CSci 3115, Fox

CSci 5400 INTRODUCTION TO AUTOMATA THEORY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Turing machines, computable functions, unsolvability of the halting problem, recursive functions. Finite state models; equivalence, minimization, properties, decision questions, characterizations. Regular expressions. Survey of other automata. (Prereq 3105 or 3322 and 3400 or 3311 or #. Open for graduate credit only to **nonmajors**. Limited to 60)

Spring Qtr, ★Sec 1, Th, 6:10-8:40, EE/CSci 3111, Deng-Zhu Du

CSci 5502 INTRODUCTION TO OPERATING SYSTEMS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Definition and historical development or operating systems. Abstractions and implementations of features common to most systems. Concurrency and related control problems. Resource allocation. Storage allocation. Process manager and the kernel of an operating system. Sharing. Capability-based addressing. Protection. Performance measurement and analysis. (Prereq CLA CSci major or IT CSci major upper division or grad, 5102 and 5121 or 3322 or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 60)

Winter Qtr, ★Sec 1, Th, 6:10-8:40, LindH 203, Tripathi

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

CSci 5511 (formerly 5501) ARTIFICIAL INTELLIGENCE. 4 credits, tuition* (includes \$6 special fee): Resident \$336; Non-resident \$964; Resident Graduate credit \$402; Non-resident Graduate credit \$798; Resident Graduate School credit \$690; Non-resident Graduate School credit \$1374.

Introduction to the ideas and issues of artificial intelligence. Knowledge representation, problem solving, search, inference techniques, theorem proving. Expert systems. Introduction to applications of artificial intelligence. Artificial intelligence programming languages. Informal lab. (Prereq 5121 or 3322 or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 60)

Fall Qtr, ★Sec 1, M, 6:10-8:40, EE/CSci 3111, Gini

Continuing Education for Women

(See credit courses list on page 365. See The Compleat Scholar and Practical Scholar noncredit courses beginning page 367.)

Counseling, Chemical Dependency

(See Family Social Science)

Cultural Studies and Comparative Literature (CSCL)

(350 Folwell Hall: 624-8099)

College of Liberal Arts

Textbooks for most CLit, CSDS, and CSCL courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also American Studies, Art History; Classical and Near Eastern Studies, English; General College; Humanities; Interdepartmental Study, Philosophy, Psychology; The Compleat Scholar non-credit courses; and individual foreign language departments for other literature courses)

Chris Bezat, Lecturer

Giulia Colaizzi, Lecturer

Laura Dolby, Lecturer

Jeanine Ferguson, Lecturer

Jeanne Freiburg, Lecturer

Bruce Jenkins, Lecturer in Art History

Sharon Scapple, Assistant Professor, Metropolitan State University

David Shupe, Lecturer in Religious Studies

Gary Thomas, Assistant Professor

Wei Zhang, Lecturer

Jacquelyn Zita, Assistant Professor, Women's Studies

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in Comparative Literature, Comparative Studies in Discourse and Society, and Cultural Studies and Comparative Literature. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before registration for that quarter begins.

Continuing Education for Women (CEW) section available in the following course: CSCL 1301

Comparative Literature (CLit)

No courses offered 1993-94

Cultural Studies and Comparative Literature (CSCL)

Most of the courses for a major in Cultural Studies and Comparative Literature can be completed in the evening.

Students interested in a major in Cultural Studies and Comparative Literature should discuss plans with a CEE adviser (625-2500).

B.A. Major Sequence

Major Requirements

Option A: CSCL Department Courses—48 credits to include (1) CSCL 1301, 1302, and 1303 (12 credits); (2) Five 3xxx-level CSCL courses, including courses from at least three of the following four divisions (20 credits): a) Discursive Practices, b) Culture and Conflict: Case Studies, c) Influential Configurations of Knowledge, and d) Social Constructions of the Subject; 3) Four 5xxx-level CSCL courses, including one CSCL 5990 (Senior Workshop/Major Project) and three additional courses carrying any of the departmental designators (CSCL, CLit, CSDS) (16 credits)

Option B: Concentration (16 credits)—Four 3xxx-5xxx CLA courses relevant to the declared area of concentration, approved by an adviser. At least one course must be from CSCL, CLit, or CSDS. None of the four courses can be 1xxx level (16 credits).

Note: For sections A2, A3, and B, departmental (CSCL, CLit, CSDS) topics courses (3910 and 5910) and directed studies (3970 and 5970) will meet stated requirements. Up to four courses in sections A and B, excluding 3xxx- and 5xxx-department courses, may be taken S-N.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Minor Sequence

Minor Requirements

(Minimum 24 credits)

Six CSCL courses, including a) CSCL 1301 (4 credits), and 1302 or 1303 (4 credits); b) three 3xxx-level courses (12 credits), and c) one 5xxx-level CSCL course carrying any of the departmental designators (CSCL, CLit, CSDS) (4 credits)

Concentration—Under either option, the nature of the concentration and the courses which comprise it are a matter of your own choice, though your final program must be approved by your adviser.

Sections are offered through Continuing Education for Women in the following course: CSCL 1301

You need not be majoring in Cultural Studies and Comparative Literature to register for these classes.

CSCL 1301 DISCOURSE AND SOCIETY. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

General introduction to modes of expression (e.g. verbal, visual, musical) through representative works. Analysis of discourse in relation to social structures, examining its role in creating and contesting social borders, replicating cultures, and attaching differential privilege to various cultural practices. (No prereq. Limited to 30)

Fall Qtr, Sec 1, Th, 9:30 a.m.-12, MacP. *Offered through Continuing Education for Women*

Fall Qtr, Sec 2, Th, 6:20-8:50, FolH 138

Winter Qtr, Sec 3, Th, 6:20-8:50, FolH 138

Spring Qtr, Sec 4, M, 6:20-8:50, FolH 138

CSCL 1303 KNOWLEDGE, PERSUASION, AND POWER. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Inquiry into the ways certain bodies of discourse come to cohere, to exercise persuasive power, and to be regarded as authoritative, while others are marginalized, ignored, or denigrated. Interrelations of center and periphery, hegemony and counter-hegemony, canon and apocrypha. (No prereq. Limited to 30)

Spring Qtr, Sec 1, W, 6:20-8:50, FolH 208

CSCL 1921 INTRODUCTION TO FILM STUDY. 4 credits, \$ArH 1921, tuition* (includes \$15 course fee): Resident \$295; Non-resident \$857. Fundamentals of film language and major theories of film, presented through detailed analysis of several films. (No prereq. Meets concurrently with ArH 1921)

Spring Qtr, Sec 1, T, 6-9, AndH 310, Jenkins

CSCL 3910 TOPICS IN COMPARATIVE LITERATURE: THE AVANT GARDE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

An examination of some visual and literary artistic practices of historical avant garde movements (e.g., expressionism, surrealism, Dada). A look at specific techniques such as photo and film montage. The last half of the course focuses on contemporary avant garde productions, in particular the work of a number of feminist filmmakers. (Prereq jr or sr or #)

Fall Qtr, Sec 1, M, 6:20-8:50, FolH 340,

Ferguson

CSCL 3910 TOPICS IN CULTURAL STUDIES AND COMPARATIVE LITERATURE: FEMINISM(S): Gender and Politics in Italy, Germany, and the United States. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Considers the cinematic constitution and representation of the rise of fascism in Europe during the 1920s and 1930s. Begins by posing several wider questions about the relationships between cinema and history: Why are they generally seen as separate entities, with film as a mere restaging or falsification of originary and "real" events? Does the position of cinema as a *social* technology reinforce national identity or does the international nature of the cinematic marketplace work against such cohesion? How is the past (re)created while viewing films with historically explicit subjects? Keeping these questions in mind, the class examines films from Italy, France, Germany, and the United State that directly address the rise of fascism in Europe. Course readings exploring the meaning of "fascism," as well as the term's particular valence for discussion of cinema, supplement the film viewing. (Prereq jr or sr or #)

Fall Qtr, Sec 2, Th Lect, 4:40-6:45, FolH 340,

Freiburg, Colaizzi; Th Film Showing, 7:15-9:30, FolH 38

CSCL 3910 TOPICS IN CULTURAL STUDIES AND COMPARATIVE LITERATURE: CINEMA AND HISTORY: Popular Film and the Rise of Fascism. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

What is the relationship between gender and politics? How has recent feminist scholarship changed both the notion of political praxis and our understanding of women's role in the public sphere? How has women's political practice in the last few decades changed the way we think about the category of "woman" itself? By approaching recent feminist activism in Italy, Germany, and the United States, the class will interrogate national boundaries to show how a multicultural perspective can generate pertinent and challenging questions about feminism as an agent of social change. (Prereq jr or sr or #)

Winter Qtr, Sec 3, M Lect, 4:40-6:45, FolH 340,

Freiburg; M Film Showing, 7:15-9:30, FolH 38

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

CSCL 3910 ORDER AND CHAOS. 4 credits, §ReIS 3960, tuition*: Resident \$294; Non-resident \$852.60.

The victory of order over chaos is one of the oldest mythic themes known. In modern times this contest reappears as disagreement over the value given to systemic thought and reason (whether religious doctrine or scientific theory and explanation) versus the value given to all the complex aspects of existence which do not conform to traditional perspectives or theoretical explanations. Social science and the academic study of religion are primarily based on 19th-century approaches to describing and explaining human behavior—approaches which generally eliminate “chaotic” human activity from consideration. This course reviews 20th-century ideas concerning the human need for understanding and the importance of theory and explanation. It also examines several 20th-century intellectual attempts—within natural science (“chaos theory”), social science, psychology, and literature—which seek more thoroughly to acknowledge the reality and importance of chaos. Specifically examined is how understanding of human experience changes when both theoretical perspectives and that which calls theoretical perspectives into question are taken into account. (No prereq. Meets concurrently with ReIS 3960 sec 3. Limited to a combined total of 40)

Winter Qtr, ★Sec 4, M, 6:20-8:50, FolH 116,
Shupe

CSCL 3910 TOPICS IN CULTURAL STUDIES AND COMPARATIVE LITERATURE: GROWING UP GAY: Literature for Gay/Lesbian Teenagers. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Explores literature for young adults which features homosexual characters and themes. Because reading literature is one of the few ways adolescents can gather information about being gay, it is important to examine how homosexuality is portrayed, the explicit as well as implicit messages. Students will read selected texts, understand what constitutes literary artistry, understand what it means to be young and gay, speak and write critically about the readings, and be sensitive to how authors presently relate homosexuality. (Prereq jr or sr or #)

Winter Qtr, Sec 5, T, 4:30-6:30, FolH 340,
Scapple

CSCL 3910 TOPICS IN CULTURAL STUDIES AND COMPARATIVE LITERATURE: SEXUALITY AND POLITICAL TRANSITION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Examines how changes in larger political systems affect the construction of intimate lives. Beginning with Greece and Rome, the course will examine a series of case studies that demonstrate how the private body enters the service of the state. While the Roman matron depended upon morality to preserve and define her social status, the emergent pornography industry in the former U.S.S.R. also depends upon notions of social propriety and impropriety to define its place in society. Both of these examples depend upon political interventions in the private sphere. Through both lectures and discussions, students will address the political history of the private life. (Prereq jr or sr or #)

Winter Qtr, Sec 6, W, 6:20-8:50, FolH 340, Dolby

CSCL 3910 TOPICS IN CULTURAL STUDIES AND COMPARATIVE LITERATURE: SINOLOGY AND CHINESE INTELLECTUAL HISTORY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Attempts to reread and remap the modern Chinese intellectual history as a type of discourse practiced by modern sinology. One goal will be to develop some theoretical arguments against the modern sinologist positivist, reductive tendency in translating the modern China's transformation of traditional culture, intellectual history into cooperative institutions for understanding and institutionalization of its other—the West. The course will look at some of the writings by Chinese new cultural liberals as well as some “secondary” literatures produced by modern sinologists. (Prereq jr or sr or #)

Winter Qtr, Sec 7, Th, 6:20-8:50, FolH 312,
Zhang

CSCL 3910 TOPICS IN CULTURAL STUDIES AND COMPARATIVE LITERATURE: RIDERS ON THE STORM—MUSICAL REBELLION FROM MOZART TO MORRISON. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Examines how selected musical works not only read and critique, but create cultural moments and, as such, provide a way to hear that culture. Students will think rock and jazz together with so-called art music so as to cross the boundary constructed between popular and classical music, and to travel through time to diffuse the progressive, linear view common to music history and aesthetics. Topics will include rebels and stars in music (Elvis, Morrison, the Blues Queens, Liszt, Paganini, Horowitz); music and gender (Mozart,

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Kurt Weill, Bernstein, Michael Jackson, Madonna); music, the body, and technology (James Brown, Beethoven, the Beatles, Debussy, music as synthesizer); questions of form and content (symphonic process as creative destruction, the big band sound, musical montage); breaking the sound barrier: musical chaos (Hendrix, Monk, the Second Viennese School); death and music (Mahler, George Crumb, heavy metal); rhythm and time (Stravinsky, Charlie Parker, Miles Davis, rap); the spectacle (Wagner, Diamanda Galas, the rock concert); and desire and sexuality in music (Wagner, Chopin, Pearl Jam, the Black Crowes, Laurie Anderson). No formal musical knowledge is necessary. (Prereq jr or sr or #)
Spring Qtr, Sec 8, T, 6:20-8:50, NichH 201, Bezat

Comparative Studies in Discourse and Society (CSDS)

CSDS 5910 TOPICS: CONTEMPORARY DEVELOPMENT IN THEORY: Queer Theory. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

The recent development of "Queer Theory" from the theoretical scholarship of lesbian/gay/bisexual/transgender studies. Focus on the cultural construction of gender, class, and race as they intersect with sexual identity at the margins of sexual difference. (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, T, 4-6:30, FordH 155, Zita

Curriculum and Instructional Systems (CISy)

(125 Peik Hall: 625-6372)

College of Education

(Department of Curriculum and Instruction)

Textbooks for most CISy courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Enrollments in limited classes in this department are strictly enforced. Neither the department nor the course instructor will give written permission for registration in these classes once the limit is reached and the class closes. However, you may check for day school openings.

Eugene M. Anderson, Associate Professor
Kerry Freedman-Norberg, Associate Professor
William E. Gardner, Professor

Ilene Harris, Professor
Simon R. Hooper, Assistant Professor
Judith Lambrecht, Professor
Michael Williams, Lecturer
Gregory C. Sales, Associate Professor

These courses are subject to frequent changes in time and rooms. Check for correct day, time, and room in a day school class schedule.

Master's Degree—A Master of Education degree with a focus on Leadership is available through the Curriculum and Instruction department and through the Educational Policy and Administration department. This degree is designed to increase a teacher's ability to take on the expanded roles and responsibilities of educators in Minnesota and across the country. Students will be admitted into the program once a year, each fall quarter. Classes will be held at an off-campus site. Degree completion is possible within two to three years. One requirement for admission is that applicants must have at least two years of classroom teaching experience.

For further information on degree programs, telephone (612) 626-7196.

CISy 5003 INTRODUCTION TO COMPUTERS AND THEIR USES. 1 credit, tuition*: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Introduction to computer technology in instruction: hardware, software, terminology, word processing, and instructional applications. Intended for students with no background in computing. **Must be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★○Sec 1, M, 7:15-8:05, EdHAn 62

Winter Qtr, ★○Sec 2, Th, 7:15-8:05, EdHAn 62

Spring Qtr, ★○Sec 3, T, 3:35-4:15, EdHAn 62

CISy 5004 INTRODUCTION TO INTERACTIVE VIDEO INSTRUCTION. 1 credit, tuition*: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Introduction to the use of videodiscs and related technologies; hardware, software, terminology and applications in instruction. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★○Sec 1, W, 7:15-8:05, PeikH 335

Winter Qtr, ★○Sec 2, Th, 7:15-8:05, PeikH 335

Spring Qtr, ★○Sec 3, W, 7:15-8:05, PeikH 335

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

CISy 5006 INTRODUCTION TO INSTRUCTIONAL COMPUTER PROGRAMMING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Introduction to designing computer-based instructional programs through programming. Students need not have a mathematics or science background. **Must be taken A-F.** (Prereq 5003 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★●Sec 1, W, 4:30-7, EdHAN 62, Hooper

CISy 5100 CURRICULUM AND INSTRUCTIONAL SYSTEMS WORKSHOP. 1-3 credits, (maximum 9 cr). 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Special topics courses in the design, development, implementation, and evaluation of curricular and instructional systems. *Focus Sec 1:* Peer Coaching. *Focus Sec 2:* To be announced. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★●Sec 1, Th, 4:30-7, PeikH 31, Anderson

Spring Qtr, ★●Sec 2, M, 4:30-7, ChDev 216, Freedman-Norberg

CISy 5151 FOUNDATIONS OF INSTRUCTIONAL SYSTEMS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Must be taken A-F. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★●Sec 1, M, 4:30-7, PeikH 225, Hooper

Spring Qtr, ★●Sec 2, W, 4:30-7, PeikH 31, Hooper

CISy 5201 SYSTEMS APPROACH TO DESIGN OF INSTRUCTION. 3 credits, §SeEd 5201, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026. (IS)

Instructional materials design in accordance with systems principles, including design of a specific unit of courseware. **Must be taken A-F.** (Prereq 5000 or SeEd 5000 or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with HSU 5013. A joint Day/Extension class limited to a combined total of 25 Extension students)

Fall Qtr, ★●Sec 1, Th, 4:30-7, PeikH 335, Sales

CISy 5205 COMPUTER-BASED INSTRUCTION: INTRODUCTION TO DESIGN. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Examination of computer uses in education and training; models for designing computer-based instruction with particular emphasis on interface design. **Must be taken A-F.** (Prereq 5006 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★●Sec 1, T, 4:30-7, EdHAN 62, Williams

CISy 5206 MICROCOMPUTER USES IN ELEMENTARY CLASSROOMS. 3 credits, §Elem 5140, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Use of microcomputers to enhance instruction, applications in language arts, mathematics, science, social studies; evaluation of available programs. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★●Sec 1, T, 4:30-7, PeikH 355, Sales

CISy 5208 COMPUTER-BASED TOOLS FOR TEACHERS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

The use of microcomputers for instructional materials generation, record keeping and classroom management tasks in K-12 classrooms. **May be taken S-N.** (Prereq 5003 or 5206 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★●Sec 1, M, 4:30-7, PeikH 355

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

CISy 5209 PRINCIPLES AND PROCEDURES IN DESIGNING INSTRUCTION. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Major models of instructional development; generic components; design models; review of instructional design and learning environments. **Must be taken A-F.** (Prereq 5000. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★●Sec 1, W, 4:30-7:50, NichH 209, Lambrecht

Spring Qtr, ★●Sec 2, W, 4:30-7:50, PeikH 225, Lambrecht

CISy 5212 COMPUTER-BASED INSTRUCTION: DESIGN AND DEVELOPMENT. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Design and development of a computer-based instruction package, including documentation and support materials. **Must be taken A-F.** (Prereq 5205 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★●Sec 1, W, 4:30-7, PeikH 355, Hooper

CISy 5600 INTRODUCTION TO CURRICULUM SYSTEMS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Exploration of principles of curriculum design, forces influencing goals and curriculum planning, curricular trends and issues, traditional and emergent curricular designs, current proposals for change; and a model for curriculum planning. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★●Sec 1, T, 4:30-7, PeikH 315, Freedman-Norberg

Winter Qtr, ★●Sec 2, W, 4:30-7, PeikH 315, Harris

Spring Qtr, ★●Sec 3, M, 4:30-7, ChDev 218, Gardner

CISy 5800 SUPERVISION OF SECONDARY INSTRUCTION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Achievement of appropriate teaching expectations focusing on problems of personnel responsible for their improvement. **Must be taken A-F.** (Prereq 5600 or SeEd 5113. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★●Sec 1, T, 4:30-7, PeikH 215, Anderson

Day School Classes—In addition to the Extension Classes listed above, day school classes are sometimes offered to educators during late afternoon, early evening, and weekend hours. For registration information about day school Curriculum and Instruction courses, see page 148 or call 625-6372.

Dance (Dnce)

(106 Norris Hall: 624-5060)

Department of Theatre Arts and Dance
College of Liberal Arts

NOTE: Students with questions about Dnce courses should call Zoe Sealy, Extension Classes Dance Coordinator, at 626-7210.

Textbooks for most Dnce courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also CSch 0186, Danceability Jam: A Workshop in Artistic Movement for the Differently Aabled)

Diane Aldis, Teaching Specialist
Joe Chvala, Teaching Specialist
Susana DiPalma, Teaching Specialist
Michael Ellison, Teaching Assistant
Mary Harding, Teaching Specialist
Morris Johnson, Teaching Specialist
Mary B. Lampe, Associate Professor
Barbara Loeb, Teaching Specialist
Rita Mustaphi, Teaching Specialist
Ranee Ramaswamy, Teaching Specialist
Zoe Sealy, Lecturer
Cassandra Shore, Teaching Specialist
Becky Stanchfield, Teaching Specialist
Linda Stoen, Teaching Specialist

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in Dance. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before registration for that quarter begins.

It is assumed that the health of adults registering for classes will be equal to the demands of the activities in which they are to participate. Students are required to sign a "health waiver" form on the first day of class.

Dance (Dnce) courses (numbered through 1499) may be taken S-N.

Dnce 1001 FUNDAMENTALS OF MODERN DANCE I. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Introduction to fundamentals of modern dance technique. (No prereq. Limited to 20)

Fall Qtr, ★Sec 1, MW, 5:20-6:50, NorrisH 67, Aldis

Winter Qtr, ★Sec 2, MW, 7-8:30, NorrisH 67, Aldis

Dnce 1002 FUNDAMENTALS OF MODERN DANCE II. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Introduction to the fundamentals of modern dance techniques, level two. Emphasis on exploring rhythms and dynamics underlying movement. (Prereq 1001 or equivalent. Limited to 20)

Winter Qtr, ★Sec 1, MW, 5:20-6:50, NorrisH 67, Aldis

Dnce 1004 FUNDAMENTALS OF BALLET I. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Introduction to the fundamentals of classical ballet techniques including barre and center work. (No prereq. Limited to 20)

Fall Qtr, ★Sec 1, TTh, 5:20-6:50, NorrisH 67, Harding

Fall Qtr, ★Sec 2, TTh, 11:50 a.m.-1:20, NorrisH 67, Stanchfield

Winter Qtr, ★Sec 3, TTh, 5:20-6:50, NorrisH 67, Harding

Dnce 1005 FUNDAMENTALS OF BALLET II. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Fundamentals of classical ballet including barre, center work, and combinations; level two. (Prereq 1004 or equivalent. Limited to 20)

Winter Qtr, ★Sec 1, TTh, 11:50 a.m.-1:20, NorrisH 67, Stanchfield

Spring Qtr, ★Sec 2, TTh, 5:20-6:50, NorrisH 67, Harding

Dnce 1006 FUNDAMENTALS OF BALLET III. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Fundamentals of classical ballet including barre, center work, and combinations, adagio and allegro movements; level three. (Prereq 1005 or equivalent. Limited to 20)

Spring Qtr, ★Sec 1, TTh, 11:50 a.m.-1:20, NorrisH 67, Stanchfield

Dnce 1007 FUNDAMENTALS OF JAZZ I. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Basic skills of jazz dance. (No prereq. Limited to 16)

Fall Qtr, ★Sec 1, TTh, 5:30-7, RarigC 10,

Ellison

Winter Qtr, ★Sec 2, MW, 5:20-6:50, PeikG 65, Stoen

Dnce 1008 FUNDAMENTALS OF JAZZ II. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Basic skills of jazz dance and its origins, level two. (Prereq 1007 or equivalent. Limited to 16)

Winter Qtr, ★Sec 1, TTh, 5:30-7, RarigC 10, Ellison

Dnce 1009 FUNDAMENTALS OF JAZZ III. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Basic skills of jazz dance and its origins, level three. (Prereq 1008 or equivalent. Limited to 16)

Spring Qtr, ★Sec 1, TTh, 5:30-7, RarigC 10, Ellison

Dnce 1031 BALLROOM DANCE I. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Elementary steps and variations of the foxtrot, lindy, waltz, tango, cha-cha, rumba, and samba. (No prereq. Sec 1 and 2 meet concurrently; sec 3 and 4 meet concurrently; sec 5 and 6 meet concurrently. Limited to 25 each section)

Fall Qtr, ★Sec 1, M, 7-9, NorrisH 151, Lampe (men only)

Fall Qtr, ★Sec 2, M, 7-9, NorrisH 151, Lampe (women only)

Fall Qtr, ★Sec 3, TTh, 12-1, NorrisH 151, Sealy (men only)

Fall Qtr, ★Sec 4, TTh, 12-1, NorrisH 151, Sealy (women only)

Spring Qtr, ★Sec 5, M, 7-9, NorrisH 151, Lampe (men only)

Spring Qtr, ★Sec 6, M, 7-9, NorrisH 151, Lampe (women only)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Dnce 1032 BALLROOM DANCE II. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Second level of the foxtrot, lindy, waltz, tango, cha-cha, rumba, and samba with emphasis on style. (Prereq 1031 or equivalent. Sec 1 and 2 meet concurrently. Limited to 25 each section)

Winter Qtr, ★Sec 1, M, 7-9, NorrisH 151, Lampe (men only)

Winter Qtr, ★Sec 2, M, 7-9, NorrisH 151, Lampe (women only)

Winter Qtr, ★Sec 3, TTh, 12-1, NorrisH 151, Sealy (men only)

Winter Qtr, ★Sec 4, TTh, 12-1, NorrisH 151, Sealy (women only)

Dnce 1033 BALLROOM DANCE III. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Third level of the foxtrot, lindy, waltz, tango, cha-cha, rumba, and samba with emphasis on style and more complex patterns and rhythms. (Prereq 1032 or equivalent. Sec 1 and 2 meet concurrently. Limited to 25 each section)

Spring Qtr, ★Sec 1, TTh, 12-1, NorrisH 151, Sealy (men only)

Spring Qtr, ★Sec 2, TTh, 12-1, NorrisH 151, Sealy (women only)

Dnce 1034 INTERNATIONAL FOLK DANCE I. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Introductory course in International Folk Dance. Students will learn folk dances from many different cultures and countries in the world. Basic folk locomotor movements such as schottischje, polka, skip, waltz, and grapevine, as well as a variety of dance forms such as circle dance and line dance. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, W, 7-9, NorrisH 151, Loeb

Winter Qtr, ★Sec 2, W, 7-9, NorrisH 151, Loeb

Dnce 1035 INTERNATIONAL FOLK DANCE II. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Second level in the series on International Folk Dance. Student will learn folk dances from many different cultures and countries in the world. Emphasis on dances requiring greater movement memory, more complicated footwork, and more coordination in partnering. (Prereq 1034 or equivalent. Limited to 30)

Spring Qtr, ★Sec 1, W, 7-9, NorrisH 151, Loeb

Dnce 1070 BEGINNING JAZZ I. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Basic jazz dance technique, exploring the stylistic range of jazz dance and its origins. (Prereq 1003, 1006 or 1009. Limited to 16)

Winter Qtr, ★Sec 1, MW, 5:30-7, RarigC 10, Sealy

Dnce 1077 BEGINNING TAPI. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

The basic rudiments of tap. (No prereq. Limited to 18)

Fall Qtr, ★Sec 1, TTh, 5:20-6:20, PeikG 65, Chvala

Winter Qtr, ★Sec 2, TTh, 6:30-7:30, PeikG 65, Chvala

Spring Qtr, ★Sec 3, TTh, 6:30-7:30, PeikG 65, Chvala

Dnce 1078 BEGINNING TAP II. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

The basic rudiments of tap dance and its many variations. (Prereq 1077 or equivalent. Limited to 18)

Winter Qtr, ★Sec 1, TTh, 5:20-6:20, PeikG 65, Chvala

Dnce 1110 DANCE TOPICS: WORLD DANCE TECHNIQUES—LA DANSE ORIENTALE. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

An introduction to the women's classical performance dance of the Middle East. (No prereq. Limited to 25)

Fall Qtr, ★Sec 1, MW, 5:20-6:50, NorrisH 153, Shore

Dnce 1110 DANCE TOPICS: WORLD DANCE TECHNIQUES—AFRO CARIBBEAN. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

An introduction to the music, rhythms, and dance styles of the Caribbean Islands. (No prereq. Limited to 25)

Fall Qtr, ★Sec 2, TTh, 5:20-6:50, NorrisH 153, Johnson

Winter Qtr, ★Sec 3, TTh, 5:20-6:50, NorrisH 153, Johnson

Spring Qtr, ★Sec 4, TTh, 5:20-6:50, NorrisH 153, Johnson

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Dnce 1110 DANCE TOPICS: WORLD DANCE TECHNIQUES—FLAMENCO. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

The classical dance of Spain. (No prereq. Limited to 18)

Winter Qtr, ★Sec 5, MW, 5:20-6:50, NorrisH 153, DiPalma

Dnce 1110 DANCE TOPICS: WORLD DANCE TECHNIQUES—INDIAN CLASSICAL DANCE. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

The classical dances of India, including Bharatanatyam (South Indian) and Kathak (North Indian). (No prereq. Limited to 18)

Spring Qtr, ★Sec 6, MW, 5:20-6:50, PeikG 65, Mustaphi, Ramaswamy

Dnce 1110 DANCE TOPICS: JAZZ WORKSHOP. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Focus is on applying basic jazz technique to dance composition. (Prereq 1009 or equivalent. Limited to 22)

Spring Qtr, ★Sec 7, MW, 5:20-6:50, NorrisH 153, Sealy

Dnce 1110 DANCE TOPICS: MODERN WORKSHOP. 1 credit, tuition* (includes \$30 special fee): Resident \$100; Non-resident \$233.

Focus is on applying basic modern technique to dance composition. (Prereq 1001, 1002 or equivalent. Limited to 20)

Spring Qtr, ★Sec 8, MW, 5:20-6:50, NorrisH 67, Aldis

Dnce 1110 DANCE TOPICS: TAP WORKSHOP. 1 credit, tuition* (includes \$30 special fee). Total: Resident \$100; Non-resident \$233.

Focus is on applying basic tap skills to dance composition. (Prereq 1079 or equivalent. Limited to 18)

Spring Qtr, ★Sec 9, TTh, 5:20-6:20, PeikG 65, Chvala

Dnce 3330 DANCE TOPICS: TEACHING AEROBICS. 2 credits, tuition* (includes \$30 special fee): Resident \$177; Non-resident \$456.30.

Students develop a core knowledge and practical skills for teaching dance exercise and basic knowledge of human anatomy, kinesiology, and physiology. (Prereq 1003 or 1006. Meets concurrently with PE 3330)

Fall Qtr, ★Sec 1, MW, 5:20-6:50, PeikG 65, Stoen

Dnce 3330 TOPICS: DANCE FOR THE ATHLETE. 2 credits, tuition* (includes \$30 special fee): Resident \$177; Non-resident \$456.30.

Dance skills for athletes which develop flexibility, strength, speed, and balance. Barre and floor work will be included. (No prereq. Limited to 18)

Winter Qtr, ★Sec 2, MW, 7-9, PeikG 65, Stoen

Dnce 3334 BODYWORK (MOVEMENT AS COMMUNICATION). 2 credits, tuition* (includes \$30 special fee): Resident \$177; Non-resident \$456.30.

Principles of techniques of bodywork including applications within wellness/stress management fields. (No prereq. Limited to 20)

Fall Qtr, ★Sec 1, M, 7-9, NorrisH 67, Aldis

Danish

(See Scandinavian Languages)

Decision Sciences (DSci)

See Information and Decision Sciences, page 233; and Operations and Management Science, page 282.

Dentistry

For information on noncredit conferences or workshops in dentistry, please contact the director, Lynda J. Young, Continuing Dental Education, Room 6-406 Moos Health Science Tower, 515 Delaware Street S.E., University of Minnesota, Minneapolis 55455; telephone 625-1418.

Design (Dsgn)

(240 McNeal Hall: 624-9700)

College of Human Ecology

(Department of Design, Housing, and Apparel)

PLEASE NOTE: Beginning Winter Quarter 1994, all Dsgn courses will be offered as DHA courses. For winter and spring quarter offerings, see the *Design, Housing and Apparel (DHA)* section of this bulletin.

Textbooks for most Dsgn courses are available at Books Underground (624-9200).

Restrictions in Design classes

1. Registration in any Design class after the first class meeting must be accompanied by the instructor's written permission.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

2. You must attend the entire first Dsgn class session or your space in that class will be forfeited.

3. Students who do not attend the first class session will lose their place in the course. A student who cannot attend the first class must write or call the instructor in advance to make arrangements to hold a place in class. A student who does not make these arrangements and has to cancel the course must obtain a written verification of nonattendance (from the instructor) to be given a tuition refund. This verification must be turned in at 101 Westbrook Hall by the end of the second week of term.

4. Design studio courses require the student to spend a minimum of two hours per week on projects for each hour spent in class.

5. Some Design classes require additional fees which cover part of the cost of expendable materials, breakage, and special facilities. Students may pay this fee at the Extension Classes Cashier's Office, 138 Westbrook Hall. In addition, some courses may also require the purchase of special tools or supplies not included in the tuition or course fees printed with each course.

6. Several courses in Design Communication require keyboarding skills and the use of a micro-computer. Students may be required to purchase a computer lab access card to complete course projects.

7. Students intending to pursue a degree program in Design Communication should contact a pre-design adviser in the College of Human Ecology (624-1717). Students should not assume that courses listed in the *Extension Classes Bulletin* constitute a complete program. Program bulletins are available from the College of Human Ecology. Design Communication students are required to pass a portfolio review following completion of basic foundation courses, prior to taking any 3xxx-level courses. Contact an adviser for details.

The Department of Design, Housing, and Apparel and Continuing Education and Extension have phased out the Graphic Design/Commercial Illustration Certificate.

For further information, call CEE Counseling at 625-2500.

(See also Studio Arts and The Compleat Scholar noncredit courses.)

St. Paul Escort Service—An escort service is now available on the St. Paul campus. Students who want a University security escort to walk with them from campus buildings to parking lots may call 624-WALK between 6 p.m. and 1 a.m.

Courses in Europe—Students interested in Interior Design may find a study abroad program of interest through the Global Campus. For further information, call 625-3379.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Dsgn. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Design Foundations and Design Communication

Dsgn 1261 (formerly 1543) FASHION ILLUSTRATION. 4 credits, \$1543, tuition* (includes \$7.50 course fee); Resident \$287.50; Non-resident \$819.50.

Human figure sketches and fashion illustration as a form of communication. Emphasis on color, proportion, cut, and fabric detail. (No prereq. Limited to 22)
Fall Qtr, ★Sec 1, TTh, 3:30-6, McNH 262, StP Campus

Dsgn 1301 (formerly 1201) INTRODUCTION TO VISUAL COMMUNICATION AND GRAPHIC DESIGN. 4 credits, \$1201, tuition*: Resident \$280; Non-resident \$812.

Overview of advertising communications process and creative procedure, terminology, and technology. Explores copywriting, design, typography, production, color separating, printing, photography, and television. Emphasis on designer's relationship with the other specialists. (No prereq. Limited to 28)

Fall Qtr, ★Sec 1, MW, 6:30-8:30, ClaOff B25, StP Campus

Fall Qtr, ★Sec 2, TTh, 6:30-8:30, ClaOff B25, StP Campus

Dsgn 1306 (formerly 1206) SPATIAL LOGIC FOR DESIGNERS. 4 credits, \$1206, tuition* (includes \$7.50 course fee); Resident \$287.50; Non-resident \$819.50.

Drafting, orthographic projection, and scale drawing fundamentals. Emphasizes use of geometry in mechanical construction of 1, 2, 3 point perspective; methods of visually communicating technical, financial, and statistical information. (Prereq Pre-Design Comm, Design Comm, ASci & Dsgn, ADsgn, Pre-ADsgn, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing. Limited to 22)

Fall Qtr, ★Sec 1, MW, 6:30-9, McNH B3, StP Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Dsgn 1323 (formerly 1523) DESIGN PROCESS: DRAWING I. 4 credits, §1523, tuition*: Resident \$280; Non-resident \$812.

Problem solving in drawing with application of design elements and principles. Assignments done both in and out of design studio. (Prereq Applied Design, Pre-Design Comm, Design Comm, Costume Design, ASci & Dsgn, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing. Limited to 22)

Fall Qtr, ★Sec 1, MW, 6:30-9, McNH 258, StP Campus

Dsgn 1325 (formerly 1525) DESIGN PROCESS: TWO DIMENSIONAL DESIGN I. 4 credits, §1525, tuition*: Resident \$280; Non-resident \$812.

Experiments with principles of two-dimensional design. (Prereq Pre-Dsgn Comm, Dsgn Comm, Applied Design, Costume Design, ASci & Dsgn, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing. Limited to 22)

Fall Qtr, ★Sec 1, MW, 3:30-6, McNH 262, StP Campus

Dsgn 1328 (formerly 1521 and 1528) DESIGN PROCESS: COLOR. 4 credits, §1528, tuition* (includes \$7.50 special fee): Resident \$287.50; Non-resident \$819.50.

Study of color concepts and their applications to design. Students will also be required to purchase supplies for this class which probably will exceed \$125. (Prereq 1501, or 1300, 1523 or 1323, or 1525 or 1325, Pre-Dsgn Comm, Applied Design, Costume Design, ASci Dsgn, Dsgn Comm, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing. Limited to 22)

Fall Qtr, ★Sec 1, TTh, 6:30-9, McNH 262, StP Campus

Dsgn 3117 (formerly 3517) HISTORY OF COSTUME: PRIMITIVE THROUGH 18TH CENTURY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75.

Emphasis on European costume. (Prereq general art history course)

Fall Qtr, ★Sec 1, T, 6:30-9, McNH 180, StP Campus

(See also CSch 0111, Historic Dress in Art)

Dsgn 3327 (formerly 3527) DESIGN PROCESS: THREE-DIMENSIONAL DESIGN. 4 credits, §3527, tuition* (includes \$10 course fee): Resident \$340; Non-resident \$967.

Study and application of principles of three-dimensional design. (Prereq 1523, or 1323, 1525 or 1325, Applied Design, Dsgn Comm, Costume Design, ASci & Dsgn, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing, pass Dsgn Comm portfolio review. Limited to 22)

Fall Qtr, ★Sec 1, MW, 6:30-9, VoTech 120, StP Campus

Dsgn 3332 (formerly 3532) FIBER STRUCTURE: WEAVING. 4 credits, §3532, tuition* (includes \$7.50 special fee): Resident \$337.50; Non-resident \$964.50.

Beginning loom techniques. Studio problems. (Prereq 1521 or 1528 or 1328, or 1325, or #. Limited to 16)

Fall Qtr, ★Sec 1, TTh, 3:30-6, McNH 16, StP Campus (A joint Day/Extension class)

(See also CSch 0184, Learning to Weave)

Dsgn 3334 (formerly 3534) COMPUTER APPLICATIONS TO DESIGN PROBLEMS. 4 credits, §3534, tuition* (includes \$7.50 special fee): Resident \$337.50; Non-resident \$964.50.

Focuses on solutions to the design process using the Macintosh. Students will gain experience in micro-computers, peripherals, and software. *Students must purchase a computer lab access card.* (Prereq 1523 or 1323, 1525 or 1325, 1528 or 1328, or #. Limited to 20)

Fall Qtr, ★Sec 1, MW, 3:30-6, McNH 305 (Mac Lab), StP Campus

Dsgn 3350 (formerly 3355) TYPOGRAPHIC DESIGN. 4 credits, §3255, tuition* (includes \$7.50 course fee): Resident \$337.50; Non-resident \$964.50.

Theory and application of principles of typographic composition. Emphasis on typography history, type faces and letter forms, typesetting methods, terminology, type specification and copy fitting. (Prereq pass portfolio review for degree program. Limited to 22)

Fall Qtr, ★Sec 1, MW, 3:30-6, McNH 258, StP Campus

(See also CSch 0363, The Fault With Default: Typography for Desktop Publishing)

Dsgn 3351 (formerly 3251) GRAPHIC DESIGN I. 4 credits, §3251, tuition* (includes \$7.50 course fee): Resident \$337.50; Non-resident \$964.50.

Layout techniques, materials, and structure, color theory. Applications of type style and copy fitting. (Prereq 3350 or 3355, or #. Limited to 22)

Fall Qtr, ★Sec 1, TTh, 3:30-6, McNH B3, StP Campus (A joint Day/Extension class)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Dsgn 3352 (formerly 3252) GRAPHIC DESIGN II. 4 credits, \$3252, tuition* (includes \$7.50 course fee): Resident \$337.50; Non-resident \$964.50.

Continued development of professional skills in areas of layout and design for advertising. Photographic techniques, color separation, and other printing/production techniques are included. (Prereq 3351 or 3251 or #. Limited to 22)

Fall Qtr, ★Sec 1, TTh, 6:30-9, McNH B3, StP Campus

Dsgn 3380 (formerly 3280) DESIGN PORTFOLIO. 4 credits, \$3280, tuition*: Resident \$330; Non-resident \$957.

Compilation of individual portfolios; individual and group critiques. Preparation of slides. Should be taken as final course in program. (Prereq 20 cr of 32xx and/or 35xx courses and pass portfolio review for degree program. Limited to 22)

Fall Qtr, ★Sec 1, MW, 3:30-6, McNH B3, StP Campus

Dsgn 5334 (formerly 5534) COMPUTER APPLICATIONS TO DESIGN II. 4 credits, \$5534, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Solutions to the design process using Macintosh computers. Students use software to combine images and print and explore color and desktop publishing. *Students must purchase a computer lab access card.* (Prereq 3334 or 3534. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Fall Qtr, ★Sec 1, TTh, 6:30-9, McNH 305, StP Campus

Interior Design

Dsgn 1621 (formerly 1550) INTERMEDIATE DRAFTING. 4 credits, \$1550, tuition* (includes \$10 course fee): Resident \$290; Non-resident \$822.

Intermediate-level drafting instruction in parallel drawing, perspective drawing, and architectural dimensioning. (Prereq demonstrated proficiency in basic drafting techniques. Limited to 20)

Fall Qtr, ★Sec 1, TTh, 6:30-9:30, McNH 480, StP Campus

Dsgn 1642 (formerly 1555) INTERIOR DESIGN: STUDIO II. 4 credits, \$1555, tuition* (includes \$10 course fee): Resident \$290; Non-resident \$822.

Problems in designing for interior space needs with emphasis on behavioral concerns related to interiors. (Prereq 1641. Limited to 20)

Fall Qtr, ★Sec 1, MWF, 3:30-5:30, McNH 475, StP Campus

DHA 3170 SPECIAL TOPICS: INTERIOR DESIGN CODES AND ENVIRONMENTAL ISSUES. 3 credits. Tentatively scheduled for 1994-95.

Dsgn 3622 (formerly 3550) INTERIOR DESIGN PRESENTATION. 3 credits, \$3550, tuition* (includes \$7.50 course fee): Resident \$255; Non-resident \$725.25.

Methods of rapid rendering for interiors in various media. Presentation techniques for interior details. (Prereq pass portfolio review, written Δ. Limited to 20)

Fall Qtr, ★Sec 1, MW, 6:30-9:30, McNH 480, StP Campus

Dsgn 3623 (formerly 3552) COMPUTER-AIDED DESIGN, DRAFTING SYSTEM I. 4 credits, \$3552, tuition* (includes \$7.50 special fee): Resident \$337.50; Non-resident \$964.50.

Application of two-dimensional computer-aided design in the design process as it relates to interior design. AutoCAD software used on an IBM-PC. *Students must purchase a computer lab access card.* (Prereq 1621 or equivalent. Limited to 19)

Fall Qtr, ★Sec 1, MW, 3:30-6:30, McNH 305 (IBM Lab), StP Campus

Dsgn 3632 (formerly 3554) INTERIOR BUILDING TECHNOLOGY. 4 credits, \$3554, tuition*: Resident \$330; Non-resident \$957.

Methods of building construction and principles of structure theory. Emphasis on interior architectural components and systems. (Prereq pass portfolio review, 1621, Hsg 1401 or 1801 or #. Limited to 20)

Fall Qtr, ★Sec 1, TTh, 6:30-9:30, McNH 475, StP Campus

Design, Housing, and Apparel (DHA)

(240 McNeal Hall: 624-9700)
College of Human Ecology

PLEASE NOTE: Beginning Winter Quarter 1994, all courses previously offered as Dsgn, Hsg, and TexC courses are offered as DHA courses. For fall quarter offerings, see the three separate *Design (Dsgn)* and *Housing (Hsg)* and *Textiles and Clothing (TexC)* sections of this bulletin.

Textbooks for most DHA courses are available at Books Underground (624-9200)

Evelyn Franklin, Associate Professor
Delores A. Ginthner, Assistant Professor
Earl Morris, Professor
Shari Peterson, Assistant Professor

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Restrictions in DHA classes

1. Registration in any DHA class after the first class meeting must be accompanied by the instructor's written permission.

2. You must attend the entire first DHA class session or your space in that class will be forfeited.

3. Students who do not attend the first class session will lose their place in the course. A student who cannot attend the first class must write or call the instructor in advance to make arrangements to hold a place in class. A student who does not make these arrangements and has to cancel the course must obtain a written verification of nonattendance (from the instructor) to be given a tuition refund. This verification must be turned in at 101 Wesbrook Hall by the end of the second week of term.

4. Design studio courses require the student to spend a minimum of two hours per week on projects for each hour spent in class.

5. Some DHA classes require additional fees which cover part of the cost of expendable materials, breakage, and special facilities. Students may pay this fee at the Extension Classes Cashier's Office, 138 Wesbrook Hall. In addition, some courses may also require the purchase of special tools or supplies not included in the tuition or course fees printed with each course.

6. Several courses in Design Communication require keyboarding skills and the use of a micro-computer. Students may be required to purchase a computer lab access card to complete course projects.

7. Students intending to pursue a degree program in Design Communication should contact a pre-design adviser in the College of Human Ecology (624-1717). Students should not assume that courses listed in the *Extension Classes Bulletin* constitute a complete program. Program bulletins are available from the College of Human Ecology. Design Communication students are required to pass a portfolio review following completion of basic foundation courses, prior to taking any 3xxx-level courses. Contact an adviser for details.

The Department of Design, Housing, and Apparel and Continuing Education and Extension have phased out the Graphic Design/Commercial Illustration Certificate.

For further information, call CEE Counseling at 625-2500.

(See also Studio Arts and The Compleat Scholar noncredit courses)

St. Paul Escort Service—An escort service is now available on the St. Paul campus. Students who want a University security escort to walk with them from campus buildings to parking lots may call 624-WALK between 6 p.m. and 1 a.m.

Courses in Europe—Students interested in Interior Design may find a study abroad program of interest through the Global Campus. For further information, call 625-3379.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in DHA. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Apparel Sciences and Design

DHA 1211 (formerly TexC 1211, 1641) INTRODUCTION TO RETAIL MERCHANDISING. 4 credits, \$1641, §GC 1511, tuition*: Resident \$280; Non-resident \$812.

Orientation to types of retailers; identification of and research on the retail consumer; retail functions including management and merchandise control. (No prereq. Limited to 30)

Spring Qtr, ★Sec 1, W, 5:30-9, ApH 226,
Peterson

DHA 1261 (formerly Dsgn 1261) FASHION ILLUSTRATION. 4 credits, \$1543, tuition* (includes \$7.50 course fee): Resident \$287.50; Non-resident \$819.50.

Human figure sketches and fashion illustration as a form of communication. Emphasis on color, proportion, cut, and fabric detail. (No prereq. Limited to 22)

Spring Qtr, ★Sec 1, MW, 3:30-6, McNH 262,
StP Campus

DHA 3211 (formerly TexC 3211, 1602) HUMAN BODY GARMENT INTERFACE. 4 credits, \$1602, tuition*: Resident \$330; Non-resident \$957.

Introduction to the relationship between garment design and human body needs throughout the life cycle. Anthropometric issues such as analysis of movements, of changing body proportion, and of differences in joint and muscle development affecting garment wearability. (Prereq sewing experience necessary. Limited to 20)

Winter Qtr, ★Sec 1, TTh, 6:30-9, McNH 205,
212, 216, StP Campus

Spring Qtr, ★Sec 2, MW, 6:30-9, McNH 205,
212, 216, StP Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

DHA 3213 (formerly TexC 3213, 3664) FASHION TREND ANALYSIS. 4 credits, \$3664, tuition*: Resident \$330; Non-resident \$957.

Factors that influence the acceptance or rejection of apparel and other textile products at the consumer level. Analysis of current trends and future projections. (Prereq junior, senior, Soc 1001, Psy 1001. Limited to 40)

Spring Qtr, ★Sec 1, MW, 6:30-9:30, McNH 180, StP Campus

DHA 3218 (formerly TexC 3218, 3660) COMPUTER-AIDED DESIGN OF APPAREL. 4 credits, \$3660, tuition* (includes \$7.50 special fee): Resident \$337.50; Non-resident \$964.50.

Students must purchase a computer lab access card. (No prereq. Limited to 19)

Winter Qtr, ★Sec 1, TTh, 6:30-9, McNH 305 (IBM Lab), StP Campus

Spring Qtr, ★Sec 2, MW, 3:30-6, McNH 305 (IBM Lab), StP Campus

Design Foundations and Design Communication

DHA 1300 (formerly Dsgn 1300, 1501) INTRODUCTION TO DESIGN. 3 credits, \$1501, tuition*: Resident \$210; Non-resident \$609.

Study of basic design processes, the elements, principles, evaluation, and history of design in global perspective. (No prereq)

Spring Qtr, ★Sec 1, T, 6:30-9, McNH 198, StP Campus

DHA 1301 (formerly Dsgn 1301, 1201) INTRODUCTION TO VISUAL COMMUNICATION AND GRAPHIC DESIGN. 4 credits, \$1201, tuition*: Resident \$280; Non-resident \$812.

Overview of advertising communications process and creative procedure, terminology, and technology. Explores copywriting, design, typography, production, color separating, printing, photography, and television. Emphasis on designer's relationship with the other specialists. (No prereq. Limited to 28)

Winter Qtr, ★Sec 1, MW, 6:30-8:30, ClaOff B25, StP Campus

Winter Qtr, ★Sec 2, TTh, 6:30-8:30, ClaOff B25, StP Campus

Spring Qtr, ★Sec 3, MW, 6:30-8:30, BorH 365, StP Campus

Spring Qtr, ★Sec 4, TTh, 6:30-8:30, ClaOff B25, StP Campus

DHA 1306 (formerly Dsgn 1306 1206) SPATIAL LOGIC FOR DESIGNERS. 4 credits, \$1206, tuition* (includes \$7.50 course fee): Resident \$287.50; Non-resident \$819.50.

Drafting, orthographic projection, and scale drawing fundamentals. Emphasizes use of geometry in mechanical construction of 1, 2, 3 point perspective; methods of visually communicating technical, financial, and statistical information. (Prereq Pre-Design Comm, Design Comm, ASci & Dsgn, ADsgn, Pre-ADsgn, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing. Limited to 22)

Winter Qtr, ★Sec 1, MW, 6:30-9, McNH B3, StP Campus

DHA 1323 (formerly Dsgn 1323, 1523) DESIGN PROCESS: DRAWING I. 4 credits, \$1523, tuition*: Resident \$280; Non-resident \$812.

Problem solving in drawing with application of design elements and principles. Assignments done both in and out of design studio. (Prereq Applied Design, Pre-Design Comm, Design Comm, Costume Design, ASci & Dsgn, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing. Limited to 22)

Winter Qtr, ★Sec 1, TTh, 3:30-6, McNH 258, StP Campus

Spring Qtr, ★Sec 2, TTh, 6:30-9, McNH 258, StP Campus

DHA 1325 (formerly Dsgn 1325, 1525) DESIGN PROCESS: TWO DIMENSIONAL DESIGN I. 4 credits, \$1525, tuition*: Resident \$280; Non-resident \$812.

Experiments with principles of two-dimensional design. (Prereq Pre-Dsgn Comm, Dsgn Comm, Applied Design, Costume Design, ASci & Dsgn, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing. Limited to 22)

Winter Qtr, ★Sec 2, TTh, 6:30-9, McNH 258, StP Campus

DHA 1328 (formerly Dsgn 1328, 1521, 1528) DESIGN PROCESS: COLOR. 4 credits, \$1528, tuition* (includes \$7.50 special fee): Resident \$287.50; Non-resident \$819.50.

Study of color concepts and their applications to design. Students will also be required to purchase supplies for this class which probably will exceed \$125. (Prereq 1501, or 1300, 1523 or 1323, or 1525 or 1325, Pre-Dsgn Comm, Applied Design, Costume Design, ASci Dsgn, Dsgn Comm, Housing, Interior Design, Pre-Interior Design, Retail Merchandising,

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Pre-Retail Merchandising, Textiles and Clothing. Limited to 22)

Winter Qtr, ★Sec 1, MW, 3:30-6, McNH 262, StP Campus

Spring Qtr, ★Sec 2, TTh, 6:30-9, McNH 262, StP Campus

DHA 1331 (formerly Dsgn 1331, 1531) SURFACE-FABRIC DESIGN I. 4 credits, \$1531, tuition* (includes \$35 course fee): Resident \$315; Non-resident \$847.

Exploration of surface pattern and composition with varied media and materials: dyeing, resist, batik, stencil, block printing and other. (Prereq 1521 or 1528, or 1328, 1523 or 1323, 1525 or 1325, Pre-Dsgn Comm, Dsgn Comm, Applied Design, Costume Design, ASci & Dsgn, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing. Limited to 18)

Winter Qtr, ★Sec 1, MW, 6:30-9, plus arr, McNH B9, StP Campus

DHA 3301 (formerly Dsgn 3301, 3356) PRODUCTION FOR THE GRAPHIC DESIGNER. 4 credits, \$3256, tuition* (includes \$7.50 special fee): Resident \$337.50; Non-resident \$964.50.

Investigation of processes and techniques for production of print communication. Fundamentals of keyline, mechanical art production, specification for printing industry. (Prereq pass portfolio review for degree program. Limited to 22)

Winter Qtr, ★Sec 1, MW, 3:30-6, McNH B3, StP Campus

Spring Qtr, ★Sec 2, MW, 6:30-9, McNH B3, StP Campus

DHA 3323 (formerly Dsgn 3323, 3523) DESIGN PROCESS: DRAWING II. 4 credits, \$3523, tuition*: Resident \$330; Non-resident \$957.

Advanced problem solving in drawing with application of design elements and principles. Assignments done both in and out of studio. (Prereq 1523, or 1323, 1525 or 1325, 1528 or 1328, Applied Design, Dsgn Comm, Costume Design, ASci & Dsgn, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing, pass Dsgn Comm portfolio review. Limited to 22)

Spring Qtr, ★Sec 1, MW, 3:30-6, McNH 258, StP Campus

DHA 3325 (formerly Dsgn 3325, 3525) DESIGN PROCESS: TWO-DIMENSIONAL DESIGN II. 4 credits, \$3525, tuition*: Resident \$330; Non-resident \$957.

Experiments with principles of two-dimensional design. (Prereq 1525 or 1325 or equivalent, Applied Design, Dsgn Comm, Costume Design, ASci & Dsgn, Housing, Interior Design, Retail Merchandising, or Textiles and Clothing student, pass Dsgn Comm portfolio review. Limited to 22)

Winter Qtr, ★Sec 1, MW, 3:30-6, McNH 258, StP Campus

DHA 3327 (formerly Dsgn 3327, 3527) DESIGN PROCESS: THREE-DIMENSIONAL DESIGN. 4 credits, \$3527, tuition* (includes \$10 course fee): Resident \$340; Non-resident \$967.

Study and application of principles of three-dimensional design. (Prereq 1523, or 1323, 1525 or 1325, Applied Design, Dsgn Comm, Costume Design, ASci & Dsgn, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing, pass Dsgn Comm portfolio review. Limited to 22)

Spring Qtr, ★Sec 1, TTh, 6:30-9, VoTech 120, StP Campus

DHA 3328 (formerly Dsgn 3328, 3521, 3528) DESIGN PROCESS: COLOR II. 4 credits, \$3521, 3528, tuition* (includes \$7.50 special fee): Resident \$337.50; Non-resident \$964.50.

Continued study of color concepts and their application to design. Students will also be required to purchase supplies for this class which probably will exceed \$125. (Prereq 1523 or 1323, 1528 or 1328, Applied Design, Dsgn Comm, Costume Design, ASci & Dsgn, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing, pass Dsgn Comm portfolio review. Limited to 22)

Winter Qtr, ★Sec 1, MW, 6:30-9, McNH 262, StP Campus

DHA 3331 (formerly Dsgn 3331, 3531) SURFACE-FABRIC DESIGN II. 4 credits, \$3531, tuition* (includes \$35 special fee): Resident \$365; Non-resident \$992.

Selection from printed, dyed, woven, or non-woven textiles. (Prereq 1531 or 1331, Applied Design, Dsgn Comm, Costume Design, ASci & Dsgn, Housing, Interior Design, Pre-Interior Design, Retail Merchandising, Pre-Retail Merchandising, Textiles and Clothing, pass Dsgn Comm portfolio review. Limited to 18)

Spring Qtr, ★Sec 1, MW, 6:30-9 plus arr, McNH B9, StP Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

DHA 3332 (formerly Dsgn 3332, 3532) FIBER STRUCTURE: WEAVING. 4 credits, \$3532, tuition* (includes \$7.50 special fee): Resident \$337.50; Non-resident \$964.50.

Beginning loom techniques. Studio problems. (Prereq 1521 or 1528 or 1328, or 1325, or #. Limited to 16) Spring Qtr, ★Sec 1, TTh, 6:30-9, McNH 16, StP Campus

DHA 3334 (formerly Dsgn 3334, 3534) COMPUTER APPLICATIONS TO DESIGN PROBLEMS. 4 credits, \$3534, tuition* (includes \$7.50 special fee): Resident \$337.50; Non-resident \$964.50.

Focuses on solutions to the design process using the Macintosh. Students will gain experience in micro-computers, peripherals, and software. *Students must purchase a computer lab access card.* (Prereq 1523 or 1323, 1525 or 1325, 1528 or 1328, or #. Limited to 20)

Winter Qtr, ★lwSec 1, MW, 3:30-6, McNH 305 (Mac Lab), StP Campus (A joint Day/Extension class)

Spring Qtr, ★Sec 2, TTh, 6:30-9, McNH 305 (Mac Lab), StP Campus

DHA 3337 (formerly Dsgn, 3337, 1532, 3537) FIBER STRUCTURE DESIGN I. 4 credits, \$3537, tuition*. Total: Resident \$330; Non-resident \$957.

Individual designing with two- and three-dimensional forms non-loomed techniques. (Prereq pass portfolio review, TexC 1601 or demonstrated proficiency in sewing. Limited to 20)

Spring Qtr, ★Sec 1, MW, 6:30-9, McNH 16, StP Campus

DHA 3350 (formerly Dsgn 3350, 3355) TYPOGRAPHIC DESIGN. 4 credits, \$3255, tuition* (includes \$7.50 course fee): Resident \$337.50; Non-resident \$964.50.

Theory and application of principles of typographic composition. Emphasis on typography history, type faces and letter forms, typesetting methods, terminology, type specification and copy fitting. (Prereq pass portfolio review for degree program. Limited to 22)

Winter Qtr, ★Sec 1, MW, 6:30-9, McNH 258, StP Campus

DHA 3351 (formerly Dsgn 3351, 3251) GRAPHIC DESIGN I. 4 credits, \$3251, tuition* (includes \$7.50 course fee): Resident \$337.50; Non-resident \$964.50.

Layout techniques, materials, and structure, color theory. Applications of type style and copy fitting. (Prereq 3350 or 3355, or #. Limited to 22)

Spring Qtr, ★Sec 1, TTh, 6:30-9, McNH B3, StP Campus

DHA 3352 (formerly Dsgn 3352, 3252) GRAPHIC DESIGN II. 4 credits, \$3252, tuition* (includes \$7.50 course fee): Resident \$337.50; Non-resident \$964.50.

Continued development of professional skills in areas of layout and design for advertising. Photographic techniques, color separation, and other printing/production techniques are included. (Prereq 3351 or 3251 or #. Limited to 22)

Winter Qtr, ★Sec 2, TTh, 3:30-6, McNH B3, StP Campus (A joint Day/Extension class limited to 11 Extension students)

DHA 3353 (formerly Dsgn 3353, 3253) GRAPHIC DESIGN III. 4 credits, \$3253, tuition* (includes \$7.50 course fee): Resident \$337.50; Non-resident \$964.50.

Continued development of layout skills. Exposure conditions in the workplace. Advertising psychology, consumer relations, and business management. Printing papers. Orientation in agency, studio, and corporate procedures. (Prereq 3352 or 3252. Limited to 22)

Winter Qtr, ★Sec 1, TTh, 6:30-9, McNH B3, StP Campus

Spring Qtr, ★Sec 2, TTh, 3:30-6, McNH B3, StP Campus (A joint Day/Extension class limited to 11 Extension students)

DHA 3371 (formerly Dsgn 3371, 3571) PROFESSIONAL ISSUES IN APPLIED DESIGN/VISUAL COMMUNICATIONS. 2 credits, \$3571, tuition*: Resident \$165; Non-resident \$478.50.

Discussion of issues in the field, goals, and professionalism. (Prereq completion of 60 credits in Category E. To be taken prior to or concurrently with 5303 [former13584], #)

Winter Qtr, ★Sec 1, M, 6:30-9, McNH 180, StP Campus

DHA 3380 (formerly Dsgn 3380, 3280) DESIGN PORTFOLIO. 4 credits, \$3280, tuition*: Resident \$330; Non-resident \$957.

Compilation of individual portfolios; individual and group critiques. Preparation of slides. Should be taken as final course in program. (Prereq 20 cr of 32xx and/or 35xx courses and pass portfolio review for degree program. Limited to 22)

Spring Qtr, ★Sec 1, MW, 3:30-6, McNH B3, StP Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

DHA 5170 SPECIAL TOPICS IN DESIGN, HOUSING, AND APPAREL: THE HISTORY OF VISUAL COMMUNICATION. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

An analysis of visual communication concentrating on the 19th and 20th centuries; including technological, cultural, and aesthetic influences on graphic design. (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, MW, 3:30-6, McNH 33, StP Campus

DHA 5334 (formerly Dsgn 5334, 5534) COMPUTER APPLICATIONS TO DESIGN II. 4 credits, \$5534, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Solutions to the design process using Macintosh computers. Students use software to combine images and print and explore color and desktop publishing. *Students must purchase a computer lab access card.* (Prereq 3334 or 3534. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Winter Qtr, ★Sec 1, TTh, 6:30-9, McNH 305, StP Campus

Spring Qtr, ★Sec 2, MW, 3:30-6, McNH 305, StP Campus

(See also CSch 0362, Layout and Page Design: Tips and Techniques for Desktop Publishing)

DHA 5337 (formerly Dsgn 5337, 5537) FIBER STRUCTURE DESIGN: QUILTING. 4 credits, \$5537, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Application of color and design principles through techniques of patchwork and quilting. (Prereq pass portfolio review. Qualified students may register for graduate credit at the University of Minnesota. Limited to 16)

Winter Qtr, ★Sec 1, TTh, 3:30-6, McNH 16, StP Campus

Interior Design

DHA 1621 (formerly Dsgn 1621, 1550) INTERMEDIATE DRAFTING. 4 credits, \$1550, tuition* (includes \$10 course fee): Resident \$290; Non-resident \$822.

Intermediate-level drafting instruction in parallel drawing, perspective drawing, and architectural dimensioning. (Prereq demonstrated proficiency in basic drafting techniques. Limited to 20)

Winter Qtr, ★Sec 1, MW, 6:30-9:30, McNH 480, StP Campus

Spring Qtr, ★Sec 2, TTh, 6:30-9:30, McNH 480, StP Campus

DHA 1641 (formerly Dsgn 1641, 1554) INTERIOR DESIGN: STUDIO I. 4 credits, \$1554, tuition* (includes \$10 course fee): Resident \$290; Non-resident \$822.

Application of design elements and principles to interior design problems, including two-dimensional projects, scale models, and three-dimensional design experiments in the space laboratory. (Prereq 1300, 1323, 1328, 1621. Limited to 20)

Winter Qtr, ★Sec 1, MWF, 3:45-5:45, McNH 480, StP Campus

Spring Qtr, ★Sec 2, MWF, 3:45-5:45, McNH 475, StP Campus

DHA 1642 (formerly Dsgn 1642, 1555) INTERIOR DESIGN: STUDIO II. 4 credits, \$1555, tuition* (includes \$10 course fee): Resident \$290; Non-resident \$822.

Problems in designing for interior space needs with emphasis on behavioral concerns related to interiors. (Prereq 1641. Limited to 20)

Winter Qtr, ★Sec 1, MWF, 3:30-5:30, McNH 475, StP Campus

DHA 3170 SPECIAL TOPICS: INTERIOR DESIGN CODES AND ENVIRONMENTAL ISSUES. 3 credits, tuition. **Tentatively scheduled for 1994-95.**

DHA 3622 (formerly Dsgn 3622, 3550) INTERIOR DESIGN PRESENTATION. 3 credits, \$3550, tuition* (includes \$7.50 course fee): Resident \$255; Non-resident \$725.25.

Methods of rapid rendering for interiors in various media. Presentation techniques for interior details. (Prereq pass portfolio review, written Δ. Limited to 20)

Spring Qtr, ★Sec 1, TTh, 6:30-9:30, McNH 475, StP Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

DHA 3623 (formerly Dsgn 3623, 3552) COMPUTER-AIDED DESIGN, DRAFTING SYSTEM I. 4 credits, \$3552, tuition* (includes \$7.50 special fee): Resident \$337.50; Non-resident \$964.50.

Application of two-dimensional computer-aided design in the design process as it relates to interior design. AutoCAD software used on an IBM-PC. *Students must purchase a computer lab access card.* (Prereq 1621 or equivalent. Limited to 19)

Winter Qtr, ★Sec 1, MW, 6:30-9:30, McNH 305 (IBM Lab), StP Campus

DHA 3624 (formerly Dsgn 3624, 3556) COMPUTER-AIDED DESIGN DRAFTING SYSTEMS II. 4 credits, \$3556, tuition* (includes \$7.50 special fee): Resident \$337.50; Non-resident \$964.50.

Application of design principles utilizing advanced 2-D and 3-D computer-aided design and application to the interior design profession using AutoCAD on the IBM-PC. *Students must purchase a computer lab access card.* (Prereq 3623. Limited to 19)

Spring Qtr, ★Sec 1, TTh, 6:30-9:30, McNH 305 (IBM Lab), StP Campus

DHA 3632 (formerly Dsgn 3632, 3554) INTERIOR BUILDING TECHNOLOGY. 4 credits, \$3554, tuition*: Resident \$330; Non-resident \$957.

Methods of building construction and principles of structure theory. Emphasis on interior architectural components and systems. (Prereq pass portfolio review, 1621, Hsg 1401 or 1801 or #. Limited to 20)

Winter Qtr, ★Sec 1, TTh, 3:30-6:30, McNH 480, StP Campus

DHA 3633 (formerly Dsgn 3633, 3548) LIGHTING DESIGN FOR ENVIRONMENTAL SPACES. 3 credits, \$3548, tuition*: Resident \$247.50; Non-resident \$717.75.

Examination of types and uses of lighting, its relationship to color, and energy conservation. Evaluation of light quantity and quality for residential and non-residential. (Prereq Phys 1001. A joint Day/Extension class)

Winter Qtr, ○Sec 1, TTh, 3:30-5:15, McNH 33, StP Campus, Ginthner

DHA 3643 (formerly Dsgn 3643, 3553) INTERIOR DESIGN STUDIO III. 4 credits, \$3553, tuition*: Resident \$330; Non-resident \$957.

Intermediate interior design problems related to non-residential spaces. (Prereq 3622, Δ)

Winter Qtr, Sec 1, TTh, 3:30-6:30, McNH 475, StP Campus

Spring Qtr, Sec 2, TTh, 3:30-6:30, McNH 475, StP Campus

Housing

DHA 5461 (formerly Hsg 5461, 5861) HOUSING MANAGEMENT. 5 credits, \$5861, tuition*: Resident \$412.50; Non-resident \$1196.25; Resident Graduate credit \$495; Non-resident Graduate credit \$990; Resident Graduate School credit \$855; Non-resident Graduate School credit \$1710.

Career demands for professionalism in housing management. Emphasis on increasing interpersonal skills. Includes historical perspectives, current status of housing, management approaches, psychosocial impact of housing and community design, specific residential populations. (Prereq 3463 or 3863 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ○Sec 1, TTh, 2:30-4:45, McNH 376, StP Campus, Franklin

DHA 5481 (formerly Hsg 5481, Dsgn 5581, 5881) DESIGNED ENVIRONMENTS AND AGING. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Design of environments with potential to compensate for deficits in physical and mental functioning; emphasis on older adults and on barrier-free, flexible, and responsible physical environments. (Prereq 3463 or 3863 or Dsgn 1642 or 1555 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ○Sec 1, MW, 3:30-6:30, McNH 376, StP Campus, Franklin

Dutch (Dtch)

(231 Folwell Hall: 625-2080)

College of Liberal Arts

Textbooks for most Dtch courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

James Parente, Jr., Professor
Nicolaas van der Sanden, Lecturer

A minor in Dutch can be completed in the evening.

Required Preparatory Courses: 1101-1102-1103 or 1110; 1104-1105-1106.

Minor Requirements: 3011, 8 cr of 3310, 3510, two courses to be chosen with the help of an adviser.

Read about language laboratories on page 51.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Dtch 1101-1102-1103. BEGINNING DUTCH. 5 credits each quarter, tuition each quarter*: Resident \$350; Non-resident \$1015.

Emphasis on proficiency according to the national ACTFL system. Reception (listening and reading) emphasized first, followed by production (speaking and writing). (No prereq for 1101; 1101 or 5 cr of 1110 for 1102; 1102 or 10 cr of 1110 for 1103. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, 1101, ★●Sec 1, MWTh, 4-5:30, FolH 104, Van der Sanden

Winter Qtr, 1102, ★●Sec 1, MWTh, 4-5:30, FolH 234, Van der Sanden

Spring Qtr, 1103, ★●Sec 1, MWTh, 4-5:30, FolH 234, Van der Sanden

Dtch 1104-1105-1106. INTERMEDIATE DUTCH. 5 credits each quarter, tuition each quarter*: Resident \$350; Non-resident \$1015.

Emphasis on proficiency according to the national ACTFL system. Listening, reading, speaking, writing at the Intermediate and Advanced levels on ACTFL scale. (Prereq 1103 or completion of 1110 for 1104; 1104 for 1105; 1105 for 1106. A joint Day/Extension class)

Fall Qtr, 1104, ●Sec 1, MW, 5:50-8, FolH 104

Winter Qtr, 1105, ●Sec 1, MW, 5:50-8, FolH 234

Spring Qtr, 1106, ●Sec 1, MW, 5:50-8, FolH 234

Dtch 3011-3012 CONVERSATION AND COMPOSITION. 4 credits each quarter, tuition each quarter*: Resident \$294; Non-resident \$852.60.

Spoken Dutch; composition; development of vocabulary; grammar review. (Prereq 1106 or # for 3011; 3011 for 3012. 3011 and 3012 meet concurrently. A joint Day/Extension class)

Fall Qtr, 3011, ●Sec 1, TTh, 5:45-7, FolH 326

Fall Qtr, 3012, ●Sec 1, TTh, 5:45-7, FolH 326

Dtch 3310 STUDIES IN DUTCH AUTHORS: COLONIALISM, DECADENCE, AND THE LOSS OF THE SELF. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Selected works by major Dutch and Flemish writers, 1860-1940. May be repeated for credit. (Prereq 1103 or 15 cr of 1110 or #. Meets concurrently with 3610 sec 1. A joint Day/Extension class)

Fall Qtr, ●Sec 1, T, 3:35-5:30, FolH 426, Parente

Dtch 3310 STUDIES IN DUTCH AUTHORS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. One author studied in depth. May be repeated for credit. (Prereq 1103 or 15 cr of 1110 or #. Meets concurrently with 3610. A joint Day/Extension class)

Spring Qtr, ●Sec 2, T, 3:35-5:30, FolH 234

Dtch 3510 TOPICS IN DUTCH CULTURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

A single topic of Dutch culture explored in depth. Topics vary. **Requires no knowledge of Dutch.** May be repeated for credit. (No prereq. A joint Day/Extension class)

Winter Qtr, ●Sec 1, T, 3:35-5:30, FolH 334

Dtch 3610 DUTCH AUTHORS IN TRANSLATION: COLONIALISM, DECADENCE, AND THE LOSS OF THE SELF. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Selected works by major Dutch and Flemish writers, 1860-1940. May be repeated for credit. (No prereq. Meets concurrently with 3310 sec 1. A joint Day/Extension class)

Fall Qtr, ●Sec 1, T, 3:35-5:30, FolH 426, Parente

Dtch 3610 DUTCH AUTHORS IN TRANSLATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

One author studied in depth. **Requires no knowledge of Dutch.** May be repeated for credit. (No prereq. Meets concurrently with 3310. A joint Day/Extension class)

Spring Qtr, ●Sec 2, T, 3:35-5:30, FolH 234

Early Childhood Studies Program

(Department of Extension Classes, 306 Westbrook Hall: 625-1088)

Program Director: Mary Lou Gilstad

Senior Secretary: Patti Johnson

Instructors: Wayne Caron, Lane Fischer, Joyce Frett, Sandy Heidemann, Deb Jones, Ken Nitsche, Shirley Peterson, Becky Richardson, Margaret Roozen

An interdisciplinary program within Extension Classes which offers continuing education courses and competency-based training for child care professionals and paraprofessionals, family-based service providers, foster care providers, and military personnel. Other courses related to Early Childhood can be found in this Bulletin listed under Child Psychology, Educational Psychology, and Family Social Science. For information regarding the Early Childhood field, contact CEE Counseling at 625-2500 or the College of Education Student Affairs Office at 625-6501. For Prekindergarten/Nursery School licensure, contact Lynn Galle at 624-7009. For the undergraduate Early Childhood degree, contact Harlan Hansen at 625-4039.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

East Asian Studies

See Area Studies Programs, page 75; and the Institute of Languages and Literatures, page 237.

Ecology, Evolution, and Behavior (EEB)

(109 Zoology: 625-4466)

College of Biological Sciences

Textbooks for most EEB courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Biology; BGS 3003, Business and the Natural Environment; General College; Interdepartmental Study courses, page 244; The Compleat Scholar noncredit courses; and GC 1112, Science in Context: Human Uses of the Environment)

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Ecology, Evolution, and Behavior. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

International Internships and Study Abroad—Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

EEB 3001 INTRODUCTION TO ECOLOGY. 4 credits, tuition*: Resident \$330; Non-resident \$957. (IS)

Basic concepts in ecology; the organization, development, and functioning of ecosystems; population growth and regulation. Human impact on ecosystems. Not open to biology majors. (No prereq. Open to juniors and above, or completion of 90 credits) Fall Qtr, Sec 1, MW, 6:20-8:15, Ecology 150c

(See also CSch 0589, A Green Marshall Plan? Impact of U.S. Foreign Policy on the Global Environment)

Economics (Econ)

(1035 Management/Economics: 625-6353)

College of Liberal Arts

Textbooks for most Econ courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also Public Affairs)

Harlan M. Smith, Professor Emeritus of Economics

You need not be majoring in Economics to register for any economics classes, but you need to have completed prerequisite courses.

B.A. and B.S. Majors—The Department of Economics offers four major sequences, two for the B.A. degree and two for the B.S. The B.S. degree is more quantitative in orientation than the B.A. The specialized tracks (B.A. Quantitative Emphasis major program and B.S. Mathematics Emphasis major program) stress particular supporting quantitative skills (calculus, linear algebra, and econometrics), while the two general tracks (B.A. and B.S. major programs) do not require such specific quantitative courses. The senior advisor for majors and premajors is the Director of Undergraduate Programs.

Students interested in a degree in economics are urged to request the College of Liberal Arts bulletin which explains the B.A. and B.S. in detail; telephone (612) 625-2008.

B.A. Major Sequence

The B.A. major program is intended to give the student a solid background in economics without assuming that he or she will pursue a career or graduate training in economics. The B.A. major program is the least quantitative of the four major options and offers considerable freedom in course selection from among many upper division electives.

Required Preparatory Courses—

1101 or 1101H or 1104 or equiv;
1102 or 1102H or 1105 or equiv;
Math 1142 or 1251 or equiv;
Stat 1001 or equiv recommended

Major Requirements—

Part I:

Stat 3011-3012 (no credit for Stat 5021)
3101 or 3101H, 3102 or 3102H, 3103 or 3103H
(3101 must be taken first; 3102 and 3103 may be taken simultaneously)
28 3xxx-5xxx cr; may include three courses from Acct 3101; AgEc 3040, 3070, 3500, 3710, any 3- or 4-cr AgEc 5xxx-level course;

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

BFin 3000, 3300. Economics courses reserved for nonmajors do not count toward the 28 cr.

Part II:

Composition requirement: upper-level writing course, Comp 3014—Writing for the Quantitative Social Sciences or 3027—Advanced Expository Writing (highly recommended)

Senior project paper (obtain guidelines from the department)

Two courses in the major requirements section may be taken S-N.

GPA requirement: C or better in all courses in the major requirements section.

4 cr of directed studies courses (3970, 5970) may be applied toward the major.

Supporting coursework in computer science, mathematics, and statistics is recommended.

B.A. Quantitative Emphasis Major Sequence

The B.A. Quantitative Emphasis major program adds basic quantitative training (in calculus, linear algebra, and econometrics) to the student's economics program. This major should be especially attractive to students considering careers that require some practical economic analysis or who are considering graduate work in business administration or public affairs.

Required Preparatory Courses—

1101 or 1101H or 1104 or equiv;

1102 or 1102H or 1105 or equiv;

Math 1251-1252 or equiv

Major Requirements—

Part I:

Math 1261 or equiv

Stat 3011-3012 (no credit for Stat 5021)

3101 or 3101H, 3102 or 3102H, 3103 or 3103H (3101 must be taken first; 3102 and 3103 may be taken simultaneously); 3231

20 3xxx-5xxx cr; may include two courses from Acct 3101; AgEc 3040, 3070, 3500, 3710, any 3- or 4-cr AgEc 5xxx-level course; BFin 3000, 3300. Economics courses reserved for nonmajors do not count toward the 20 cr.

Part II:

Same as Part II for B.A. major program.

Supporting coursework in computer science and statistics is recommended.

B.S. Major Sequence

The B.S. major program emphasizes a strong quantitative component but is not designed specifically for students who plan to pursue a career or graduate training in economics. The major would be suitable for those interested in graduate work in business

administration. The student is given significant freedom in course selection from three quantitative fields (computer science, mathematics, and statistics) as well as from economics.

Required Preparatory Courses—

(a) 1101 or 1101H or 1104 or equiv;
1102 or 1102H or 1105 or equiv;
Math 1251-1252-1261 or equiv

(b) A minimum GPA of 2.50 in economics and mathematics courses is required

Major Requirements—

Part I:

Stat 5121-5122 or 5131-5132-5133 (5131-5132-5133 are more difficult) (no credit for Stat 5021 or Stat 3011-3012)

2 additional courses (at least 4 cr each) from CSci department (at or above the 31xx level), Math department (any course at or above the 31xx level except Math 3142), or Stat department (any course at the 5xxx level except Stat 5021). Courses must be approved by the economics department.

3101 or 3101H, 3102 or 3102H, 3103 or 3103H (3101 must be taken first; 3102 and 3103 may be taken simultaneously)

Two courses from: 5xxx-level honors courses; 5113; 5231-5232; 5733-5734; and 5161-5162-5163, 5164-5165-5166, 5261-5262-5263. Courses in these last three sequences may be taken S-N.

Part II:

24 3xxx-5xxx cr; may include three courses selected from Acct 3101; AgEc 3040, 3070, 3500, 3710, any 3- or 4-cr AgEc 5xxx-level course; BFin 3000, 3300. Math 5081, 5242-5243, 5606-5607-5608. Economics courses reserved for nonmajors do not count toward the 24 cr Composition requirement: Upper-level writing course, Comp 3014—Writing for the Quantitative Social Sciences or 3027—Advanced Expository Writing (highly recommended)

Two courses in the major requirements section may be taken S-N (in addition to 5161-5162-5163, 5164-5-6, or 5261-2-3)

GPA requirement: C or better in all courses in the major requirements section.

4 cr of directed studies courses (3970, 5970) may be applied toward the major.

B.S. Mathematics Emphasis Major Sequence

The B.S. Mathematics Emphasis major program is designed specifically for the student interested in graduate study of economics or a career as a profes-

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

sional economist in business, government, or college teaching. The major's strong quantitative component stresses particular quantitative skills such as multivariate calculus, linear algebra, and econometrics—essential in economics graduate training.

Required Preparatory Courses—

- (a) 1101 or 1101H or equiv;
1102 or 1102H or 1105 or equiv;
Math 1251-1252-1261 or equiv;
(Stat 3011 or equiv recommended)
- (b) A minimum GPA of 2.50 in economics and mathematics courses is required

Major Requirements—

Part I:

Math 3251-3261 or equiv
Stat 5121-5122 or 5131-5132-5133
Econ 5231 (Econometrics)
3101 or or 3101H, 3102 or 3102H, 3103 or 3103H
(3101 must be taken first; 3102 and 3103 may be taken simultaneously);
Two courses from: 5xxx-level honors courses; 5113; 5232; 5733-5734-5735; and 5161-5162-5163, 5164-5165-5166, 5261-5262-5263. Courses in these last three sequences may be taken S-N

Part II:

Same as Part II for B.S. major program
Supporting coursework in computer science is recommended.

Minor Sequence

For any of the following minor programs, no more than one course may be taken S-N; a grade of C or better is required in all courses in the minor requirements section.

General Economics Minor

Required Preparatory Courses—

1101 or 1101H or 1104;
1102 or 1102H or 1105;
Math 1142 or 1251 or equiv

Minor Requirements—

3101 or 3105 or equiv
16 additional 3xxx-5xxx cr (advance approval of courses by the economics department is needed)

Up to 4 cr of directed studies courses (3970, 5970) may be applied toward the minor

Economic Theory Minor

Required Preparatory Courses—

1101 or 1101H or 1104 or equiv;
1102 or 1102H or 1105 or equiv;
Math 1251-1252 or equiv

Minor Requirements—

Math 1261-3251-3261, or equiv
3101, 3102, 3103 or equiv
2 courses from 5107H, 5113, 5733-5734

Econometrics Minor

Required Preparatory Courses—

1101 or 1101H or 1104 or equiv;
1102 or 1102H or 1105 or equiv;
Math 1251-1252 or equiv

Minor Requirements—

Math 1261 or equiv
Stat 5121-5122 or 5131-5132-5133
3101, 3102 or equiv
5231-5232
4 cr directed studies (5970) for an econometrics research project

International Trade and Development Minor

Required Preparatory Courses—

1101 or 1101H or 1104;
1102 or 1102H or 1105;
Math 1142 or 1251 or equiv

Minor Requirements—

3101 or equiv
5331 (prereq 3102) or 5301
5337 (prereq 3102) or 5307
5315 or 3315
5431-5432 (prereq 3102, 3103) or 5401

Applied Microeconomics Minor

Required Preparatory Courses—

1101 or 1101H or 1104;
1102 or 1102H or 1105;
Math 1251 or equiv

Minor Requirements—

3101 or equiv
5531 (prereq 3102) or 3501
5631 (prereq 3103) or 3601
5611 or 5621 or 5623
5821 (prereq 3103) or 3801 or 5831 (prereq 3103)
Recommended: 3231 (prereq Stat 3011-3012 or equiv)

Monetary Economics Minor

Required Preparatory Courses—

1101 or 1101H or 1104;
1102 or 1102H or 1105;
Math 1142 or 1251 or equiv

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Minor Requirements—

Stat 3011 or equiv
3101 or 3105, 3102 or equiv
3751-3752
5721 or 3701
5731 or 5741

Students interested in a major or minor in Economics should contact CEE Counseling, 625-2500. All economics courses required for either, plus enough electives, are offered in Extension over a two- or three-year period. Other courses which are *not available in Extension* may be taken through Joint Day/Extension registration without special permission. *The only Extension economics classes available that way are Econ 1101 and 1102.*

Semester-Length Courses—All credits listed in the class description are *quarter* credits even though economics classes meet on a semester-length schedule. Credits earned in Extension are applicable toward a degree at another institution under the policies determined by that institution. Further information is found on page 37 of this bulletin.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Econ. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Econ 1101 (formerly 1002)-1102 (formerly 1001) PRINCIPLES OF ECONOMICS. 4 credits each semester, if no credit received for any equivalent course, tuition* each semester: Resident \$280; Non-resident \$812. (IS)

Principles underlying economic activity and the way these principles work out through our economic institutions. 1101 is preferably first, but if the student wishes, the two may be taken the same term to permit more rapid progress to other economics courses. 1101: Micro-economics: demand and supply, competition and monopoly, distribution of income. 1102: Macro-economics: national income, money and banking, economic growth. (Prereq ability to handle simple graphs and elementary algebra at the level of GC 0623 and GC 0631. Each section limited to 35 unless otherwise indicated)

Campus

Fall Sem, 1101, ★Sec 1, M, 6:10-7:50, VinH 313
Fall Sem, 1101, ★Sec 2, M, 6:10-7:50, VinH 314
Fall Sem, 1101, ★Sec 3, M, 8:05-9:45, VinH 313
Fall Sem, 1101, ★Sec 4, T, 6:10-7:50, VinH 313
Fall Sem, 1101, ★Sec 5, T, 8:05-9:45, VinH 313
Fall Sem, 1101, ★Sec 6, W, 6:10-7:50, VinH 313
Fall Sem, 1101, ★Sec 7, Th, 6:10-7:50, VinH 313

Fall Sem, 1102, ★Sec 1, M, 6:10-7:50, Phys 143
Fall Sem, 1102, ★Sec 2, T, 6:10-7:50, VinH 314
Fall Sem, 1102, ★Sec 3, W, 6:10-7:50, AmundH 120
Spring Sem, 1101, ★Sec 8, M, 6:10-7:50, VinH 313
Spring Sem, 1101, ★Sec 9, T, 6:10-7:50, VinH 313
Spring Sem, 1101, ★Sec 10, Th, 6:10-7:50, VinH 313
Spring Sem, 1102, ★Sec 5, M, 6:10-7:50, Phys 143
Spring Sem, 1102, ★Sec 6, W, 6:10-7:50, VinH 313
Spring Sem, 1102, ★Sec 7, Th, 6:10-7:50, AmundH 124

Roseville Area High School

Fall Sem, 1101, ★Sec 11, M, 6-7:40, room 243 (Limit 30)
Spring Sem, 1102, ★Sec 8, M, 6-7:40, room 243 (Limit 30)

Richfield Senior High School

Fall Sem, 1101, ★Sec 12, W, 6:20-8, room 144
(See also CSch 0207, Economics Without Exams)

An Interdisciplinary Offering: Econ 1102/Pol 1001—The following two courses will be offered concurrently with course material team taught, interwoven, and integrated where appropriate. *Students must register for both courses, using separate registration forms for each course.* This is a total of 9 credits.

Econ 1102 PRINCIPLES OF ECONOMICS: MACRO-ECONOMICS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Principles underlying economic activity and the way these principles work out through our economic institutions. Macro-economics: national income, money and banking, economic growth. (Prereq 1101 or equivalent, ability to handle simple graphics and elementary algebra at the level of GC 0623 and GC 0631, ¶Pol 1001, sec 3. Meets concurrently with Pol 1001, sec 3. Limited to a combined total of 28)

Winter Qtr, ★Sec 4, TTh, 6:20-9:20, HHH Ctr 20, Freeman, Green

Pol 1001 AMERICAN GOVERNMENT AND POLITICS. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Principles, organization, processes, functions of government, and the interplay of political forces in the United States. Attention given throughout to current issues. (Prereq §Econ 1102, sec 4. Meets concurrently with Econ 1102, sec 4. Limited to a combined total of 28)

Winter Qtr, ★Sec 3, TTh, 6:20-9:20, HHH Ctr 20, Freeman, Green

(About the instructors: John R. Freeman is Professor of Political Science, and George D. Green is Associate Professor of History)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Economics majors and nonmajors

Students should note that Extension Classes offers in each field of economics both a course designed for the student who is not an economics major and courses designed for economics majors. Most economics courses will be offered on a rotating basis rather than all being offered in any one year. The table below shows the comparable courses for economics majors and for others by fields. In addition to those listed, the following course is **open to economics majors and nonmajors** alike (only prerequisite is Principles of Economics, Econ 1101-1102 or equivalent):

Econ 5021 Economics, Ethics and Economic Philosophy

	Courses open to	
	Econ Majors (Prerequisites usually 3101, 3102)	Non-Majors Prerequisites Principles of Economics 1101, 1102 or equivalent
Survey of Economic Ideas	5021	3021
American Economic Problems	5031	3031
Current Economic Issues	5033	3033
The Prospective World Economy	5041	3041
Economic Development	5331	5301
Comparative Economic Systems	5337	5307
International Economics	5429	5401
Labor Economics	5531	3501
Industrial Organization and Anti-Trust Policy	5631	3601
Money and Banking	5721	3701-5701
Elements of Public Finance	3821	3801

General economics

Econ 3021 and 5021 SURVEY OF ECONOMIC IDEAS. 3-5 credits, tuition* each credit: Resident \$73.50; Non-resident \$213.15; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

A historical and analytical treatment of the development of some of the most important ideas and viewpoints in economics, and their relationship to changing economic conditions and politics, starting before Adam Smith and coming up to the present day. (Prereq 1101, 1102 or equivalent or # for 3031, and 3101 and 3102 for 5021. Qualified students may register for graduate credit for 5021 at the University of Minnesota. Student may register for 3, 4 or 5 credits; assignments and examinations will vary accordingly. Term paper required only for 5 credits) Fall Sem, Sec 1, Th, 6:10-7:50, BlegH 120, Smith

Econ 3031 and 5031 AMERICAN ECONOMIC PROBLEMS. 4 credits. **Not offered 1993-94.**

This course is designed to fill gaps by offering material not covered in other Extension economics courses at the 3000 or 5000 level. It shows how simple economic principles and other relevant considerations bear upon some of our American economic problems. (Prereq 1101, 1102 or equivalent for 3031 [not open to economics majors], 3101 or 3105 or # for 5031. 5031 may not be taken for graduate credit. The courses meet concurrently but only one may be taken for credit)

Econ 3033 and 5033 CURRENT ECONOMIC ISSUES. 4 credits. **Not offered 1993-94.**

Current controversies over economic policies to deal with some of our economic problems. Different issues are chosen for study each time the course is offered, so it may be taken more than once with instructor consent. Opportunity is provided for students to focus part of their effort on a specific issue of their choice in the general area of study. (Prereq 1101, 1102 or equivalent for 3033. 3101 or 3105 or # for 5033. Qualified students may register in 5033 for graduate credit at the University of Minnesota. The courses meet concurrently, but only one may be taken for credit)

Econ 3041 and 5041 THE PROSPECTIVE WORLD ECONOMY. 4 credits. **Not offered 1993-94.**

Consideration of what the economic future holds and what can be done now to deal with negative factors and to improve the prospects. (Prereq 1101, 1102 or equivalent for 3041 [not open to economics majors]; 3101 or 3105 or # for 5041. Qualified students may register in 5041 for graduate credit at the University of Minnesota. The courses meet concurrently but only one may be taken for credit)

Econ 5021 ECONOMICS, ETHICS, AND ECONOMIC PHILOSOPHY. 3-5 credits. **Not offered 1993-94.**

Different topic each time offered, so course may be taken more than once, with consent of instructor. (Prereq 1101, 1102 or equivalent or #. Students may register for 3, 4, or 5 credits; assignments and examinations vary accordingly. Term paper required only for 5 credits. Qualified students may register for graduate credit at the University of Minnesota)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Econ 5960 SPECIAL TOPICS IN ECONOMICS. 2 credits, tuition* each credit: Resident \$147; Non-resident \$426.30; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Meets concurrently with a multidisciplinary course, ID 5615-5616-5617 (Ways of Knowing: Six Disciplines Examined), page 245. Faculty from six different disciplines meet together with students weekly for a full academic year to discover how various academic disciplines ask questions, gather information, and validate theories. Disciplines examined include African-American studies, agriculture and applied economics, art history, economics, and genetics. Students must enroll in each quarter for four credits of the ID 5615-5616-5617 or four credits of corresponding special topics/directed studies courses; students must enroll all three quarters to receive credit. Limited to a combined total of 22 students. *For information about registration and graduate credit, call (612)625-3898.*

Economic theory

Econ 3101 MICROECONOMIC THEORY. 4 credits, \$3105 or BGS 3001, tuition*: Resident \$294; Non-resident \$852.60.

Behavior of households, firms and industries under competitive and monopolistic conditions. Factors influencing production, price and advertising decisions. Business degree students admitted prior to the Fall of 1981 or after Spring 1986 may take this course or Econ 3105. **Must be taken A-F.** (Prereq 1101, 1102 or equivalent, 1 qtr calculus, or #. Limited to 35)

Fall Sem, ★Sec 1, T, 6:10-7:50, BlegH 105

Fall Sem, ★ Sec 2, Th, 6:10-7:50, BlegH 105

Spring Sem, ★ Sec 3, M, 6:10-7:50, BlegH 120

Econ 3102 MACROECONOMIC THEORY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Factors determining the price level, the amount of employment, and unemployment, total spending by consumers, business investment, total savings, GNP and net national income. The effects of taxes and government spending on these. (Prereq 3101, or equivalent, Math 1111 or 1131 or 1201 or equivalent or #. Limited to 35)

Fall Sem, ★ Sec 1, T, 6:10-7:50, BlegH 115

Spring Sem, ★ Sec 2, T, 6:10-7:50, BlegH 115

Econ 3103 WELFARE ECONOMICS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Economics majors are required to take this course to graduate. For others, it is an elective. Economic efficiency and the conditions necessary to sustain it.

Conflicts between efficiency and income distribution goals. How market structures and public policies increase or decrease efficiency. (Prereq 3101 or #) Spring Sem, Sec 1, W, 6:10-7:50, BlegH 120

Econ 3105 MANAGERIAL ECONOMICS. 4 credits, \$3101, \$BGS 3001, tuition*: Resident \$294; Non-resident \$852.60.

Theory of the firm; managerial decision problems. Demand theory. Production technology and cost concepts. Pricing and output decisions. Investment behavior. Not open to economics majors. Business degree students admitted prior to the Fall of 1981 or after Spring 1986 may take this course or Econ 3101. **Must be taken A-F.** (Prereq 1101, 1102 or equivalent, 1 qtr calculus. Limited to 35)

Fall Sem, ★ Sec 1, W, 6:10-7:50, BlegH 120

Development and area studies

Econ 5301 and 5331 ECONOMIC DEVELOPMENT. 4 credits. **Not offered 1993-94.**

The role of simple economic principles and of non-economic factors in raising a nation's standard of living. Lessons from the historical development of modern industrial economies. Problems of economic development of the underdeveloped nations today. Development planning. Issues in U.S. policy toward underdeveloped nations. (Prereq 1101, 1102 or equivalent for 5301 [not open to economics majors]; 3101, 3102 or # for 5331. The courses meet concurrently, but only one may be taken for credit. Qualified students may register for graduate credit at the University of Minnesota)

Econ 5307 and 5337 COMPARATIVE ECONOMIC SYSTEMS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Different economic systems today, including various socialist, communist, and capitalist economies. Economic ideologies and systems; alternative ways to perform basic economic functions; performance and problems of different economic systems; economic planning and the economic roles of government and the market in different countries; relations between different economic systems. (Prereq 1101, 1102 or equivalent for 5307 [not open to economics majors]; 3101, 3102 or # for 5337. The courses meet concurrently, but only one can be taken for credit. Qualified students may register for graduate credit at the University of Minnesota)

Spring Sem, Sec 1, Th, 6:20-7:50, BlegH 120,

Smith

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

International economics

Econ 5401 and 5429 (formerly 5431) INTERNATIONAL ECONOMICS. 4 credits, \$5431, 5432, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Principal issues involved in international economic relations. A one-term survey of international trade theory, arguments over tariff policy, foreign investment, exchange rates, the balance of payments, and analysis of international monetary systems. (Prereq 1101, 1102 or equivalent for 5401 [not open to economics majors]; 3101, 3102 or # for 5429. The courses meet concurrently, but only one may be taken for credit. Qualified students may register for graduate credit at the University of Minnesota)

Spring Sem, Sec 1, Th, 8:05-9:45, BlegH 120, Smith

Labor economics

Econ 3501 and 5531 LABOR ECONOMICS. 4 credits. **Not offered 1993-94.**

An introductory course dealing with the role of labor in the economy; labor as a factor of production; population and the labor force; economics of labor markets; labor market institutions; theories of wages and employment; unions and collective bargaining; current wage and employment practices; public policy. (Prereq 1101, 1102 or equivalent or # for 3501 [not open to economics majors]; 3101, 3102 for 5531. The courses meet concurrently, but only one can be taken for credit. Qualified students may register for graduate credit for 5531 at the University of Minnesota.) (See also IR 3007, Collective Bargaining and Labor Relations)

Industrial organization

Econ 3601 and 5631 INDUSTRIAL ORGANIZATION AND ANTI-TRUST POLICY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Economic aspects of anti-trust and related policies. Relations between market structure and economic efficiency and welfare. Economic origins of monopoly and other restraints on competition. Purposes and effects of anti-trust and related legislation. (Prereq 1101, 1102 or equivalent or # for 3601 [not open to economics majors]; 3101, 3102 or # for 5631. The courses meet concurrently, but only one can be taken for credit. Qualified students may register for graduate credit for 5631 at the University of Minnesota)

Fall Sem, Sec 1, M, 6:10-7:50, BlegH 120

Money and banking

Econ 5721 MONEY AND BANKING. 4 credits, \$3701, 5701, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368. **(IS)**

Historical development, present pattern, and economic role of financial institutions, with main emphasis on commercial banks, the money supply, and the Federal Reserve System. (Prereq 3101, 3102 or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Econ 3701 and 5701)

Fall Sem, Sec 1, Th, 8:05-9:45, BlegH 120, Smith

Econ 3701 and 5701 MONEY, BANKING, AND MONETARY POLICY. 4 credits, \$5721, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368. **(IS 3701)**

Money creation; determinants and control of the money supply. Effects of various monetary transactions; elementary monetary theory. Economic role of banks, bank regulation. Tight and easy money; Federal Reserve policy. (Prereq 1101, 1102 or equivalent. Not open to Econ majors, who should take 5721. The courses meet concurrently and with Econ 5721, but only one may be taken for credit. Qualified students may register for graduate credit for 5701 at the University of Minnesota)

Fall Sem, Sec 1, Th, 8:05-9:45, BlegH 120, Smith

Public finance

Econ 3801 and 5821 ELEMENTS OF PUBLIC FINANCE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Government spending and taxation—federal, state and local. Principles of taxation, the government budget, fiscal policies and the public debt. Economic impacts of various policies. (Prereq 1101, 1102 or equivalent or # for 3801 [not open to economics majors]; 3101, 3102 or # for 5821. The courses meet concurrently but only one may be taken for credit. Qualified students may register for graduate credit for 5821 at the University of Minnesota)

Spring Sem, Sec 1, W, 6:10-7:50, BlegH 225

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Education, College of

Persons interested in admission to an Education program should discuss plans with an Extension pre-education adviser (625-2500). Students with completed bachelors degrees or those close to or ready to apply to the College of Education may be referred to the College of Education Student Affairs Office, 40 Wulling Hall, 86 Pleasant Street S.E., Minneapolis, Minnesota 55455 (625-6501), for further information, or directly to the Admissions Office, 240 Williamson Hall, (625-2008), for an application. Most professional education courses must be taken in day school, when schools are in session for observation. However, all programs in the College of Education emphasize the preparation of the teacher in liberal education and in the teaching subjects. Many evening offerings listed in this bulletin may be taken by prospective teachers for later use toward degree programs or to fulfill some prerequisite course work in the College of Education.

Teachers-in-Service: Many courses in academic fields are available for teachers through evening Extension Classes registration. In addition to the professional education courses available through evening Extension Classes there are extensive offerings in the late afternoon and Saturday morning hours as part of the day school program of the College of Education. Day school class schedules and information about mail registration are available at the College of Education Student Affairs Office, 40 Wulling Hall, 86 Pleasant Street S.E., University of Minnesota, Minneapolis, Minnesota 55455 (625-6501).

International Internships and Study Abroad— Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

Study Abroad for Teachers of Spanish—a 5-week summer study abroad program offered by the Global Campus. For more information, call 625-3379.

Day School Classes

How to register in College of Education Day School Classes: Students who wish to register in late afternoon and Saturday morning education day school classes (see individual departments for a listing) should follow these steps:

Adult Special Students: (1) Begin admission and registration process at the Education Student Affairs Office, 40 Wulling Hall. (2) Secure admission approval from a Student Progress Subcouncil representative in the Education Student Affairs Office. (3) For

registration, request mail registration materials and your fee statement will be sent to you, or secure fee statement at the Registration Center, 202 Fraser Hall, and pay fees.

Master of Education (M.Ed.) Degree Students: Begin registration process at the Education Student Affairs Office, 40 Wulling Hall; mail registration is available upon request.

Master of Arts (M.A.), Doctor of Education (Ed.D.), and Doctor of Philosophy (Ph.D.) Degree Students: (1) If registered in Graduate School during previous quarters, obtain registration materials in your departmental office; new students obtain registration materials in 307 Johnston Hall. (2) Secure adviser's approval. (3) Return completed forms to 310 Johnston Hall. (4) Secure fee statement at the Registration Center, 202 Fraser Hall, and pay fees. If not admitted previously to Graduate School, contact the Graduate School (625-3014) for information about admission procedures.

For further information, contact the Education Student Affairs Office, 625-6501.

Renewal of Teaching licensure: Former teachers and those wishing to renew licenses should check with the State Department of Education (296-2046) concerning specific requirements for individual majors. (See also EPsy 5135, Workshop in Human Relations)

Please see the following listings for all College of Education course offerings:

AdEd, Adult and Teacher Education (Department of Curriculum and Instruction)

AgEd, Agricultural Education; see Vocational and Technical Education (Department of Vocational and Technical Education)

ArEd, Art Education (Department of Curriculum and Instruction)

BME, Business and Marketing Education; see Vocational and Technical Education (Department of Vocational and Technical Education)

CPsy, Child Psychology (Institute of Child Development)

CISy, Curriculum and Instructional Systems (Department of Curriculum and Instruction)

EdAd, Educational Administration (Department of Educational Policy and Administration)

EdPA, Educational Policy and Administration (Department of Educational Policy and Administration)

EPsy, Educational Psychology (Department of Educational Psychology— includes courses in the program areas of counseling and student personnel psychology, psychological foundations, school psychology, and special education)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Elem, Elementary Education (Department of Curriculum and Instruction)

HEEd, Home Economics Education; see Vocational and Technical Education (Department of Vocational and Technical Education)

Ind, Industrial Education; see Vocational and Technical Education (Department of Vocational and Technical Education)

Kin, Kinesiology (School of Physical Education and Recreation)

MthE, Mathematics Education (Department of Curriculum and Instruction)

MuEd, Music Education (School of Music)

PE, Physical Education (School of Physical Education and Recreation)

Rec, Recreation, Park, and Leisure Studies (School of Physical Education and Recreation)

SeEd, Secondary Education (Department of Curriculum and Instruction; includes courses in specific academic fields)

SPFE, Social and Philosophical Foundations of Education (Department of Educational Policy and Administration; see EdPA for complete listing)

VoEd, Vocational Education; see Vocational and Technical Education (Department of Vocational and Technical Education)

(See also FR 5403, Fundamentals of Natural Resource Education; Geo 5051, Physical Geology for Teachers; Geo 5052, Historical Geology for Teachers; Soil 5022, Basic Soil Science for Teachers)

For information about Early Childhood Studies, see page 140.

Educational Policy and Administration (EdPA)

(275 Peik Hall: 624-1006)

College of Education

(Department of Educational Policy and Administration)

Textbooks for most EdPA courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

G. F. Alkire, Associate Professor
M. S. Anderson, Assistant Professor
J. J. Cogan, Professor
A. M. Harkins, Associate Professor
V. L. Hendrix, Professor
C. P. Hooker, Professor Emeritus
J. A. King, Associate Professor
D. R. Lewis, Professor
K. S. Louis, Professor
B. J. Lum, Assistant Professor

T. L. Mazzoni, Professor
J. A. Mestenhauser, Professor
V. D. Mueller, Professor
N. C. Nickerson, Professor
J. R. Rest, Professor
B. J. Schneider, Associate Professor
C. H. Sederberg, Professor
C. S. Turner, Assistant Professor
R. F. Weatherman, Professor

Master's Degree—A Master of Education degree with a focus on Leadership is available through the Curriculum and Instruction department and through the Educational Policy and Administration department. This degree is designed to increase a teacher's ability to take on the expanded roles and responsibilities of educators in Minnesota and across the country. Students will be admitted into the program once a year, each fall quarter. Classes will be held at an off-campus site. Degree completion is possible within two to three years. One requirement for admission is that applicants must have at least two years of classroom teaching experience.

For further information on degree programs, telephone (612) 626-7196.

EdPA 5101 (formerly SPFE 5101) HISTORICAL FOUNDATIONS OF MODERN EDUCATION. 3 credits, §SPFE 5101, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Background course for all other courses in history and philosophy of education. Analysis and interpretation of important elements in modern education derived from the Greeks, the Romans, the Middle Ages, and the Renaissance. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★●Sec 1, M, 4:30-7, PeikH 155

EdPA 5103 (formerly EdAd 5103) SUPERVISION AND ADMINISTRATION OF SPECIAL EDUCATION. 3 credits, §EPsy 5660 or PsyS 5160, §EdAd 5103, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Procedures in establishing and improving educational programs for exceptional children. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with EPsy 5660. A joint Day/Extension class limited to a combined total of 15 Extension students)

Fall Qtr, ★●Sec 1, M, 4:30-7, NichH 122, Weatherman

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

EdPA 5125 (formerly SPFE 5125) YOUTH IN MODERN SOCIETY. 4 credits, §Soc 5952, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Youth in advanced societies and as a social entity; functions and roles in industrial society, family, education, politics and government, economy and work, welfare and religion; organizations, social movements, and subcultures; empirical research and cross-cultural perspectives. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Soc 5952. A joint Day/Extension class limited to a combined total of 15 Extension students)

Winter Qtr, ★○Sec 1, Arr, PeikH, Schneider

EdPA 5128 (formerly EdAd 5128) WORKSHOP: EDUCATIONAL ADMINISTRATION. 1-6 credits, §EdAd 5128. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Laboratory approach provides opportunities for experienced administrators to concentrate on common administrative and supervisory problems. Focus Sec 1: An introduction to socio-philosophical and psychological perspectives about the concept of morality and ethics and practice in framing questions about moral/ethical issues and in making decisions about moral/ethical dilemmas in educational settings. Focus Sec 2: Quality in the Education Workplace. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, W, 4:30-7, NichH 209, Lum

Fall Qtr, ★○Sec 2, Th, 7:30-10, PeikH 315, Harkins

EdPA 5131 (formerly SPFE 5131) COMPARATIVE EDUCATION. 3 credits, §SPFE 5131, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

European, Asiatic, and American systems and philosophies of education; possibilities of international education. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, M, 4:30-7, PeikH 46, Cogan

EdPA 5140 ADMINISTRATION OF EARLY EDUCATION PROGRAMS. 3 credits, §EdAd 5140, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Issues and skills relevant to an administrator who directs a preschool program or the student planning a leadership position in early education. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★○Sec 1, W, 4:30-7, PeikH, Weatherman

EdPA 5141 (formerly SPFE 5141) CRITICAL ISSUES IN CONTEMPORARY EDUCATION. 3 credits, §SPFE 5141, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Introduces graduate students to ideas involved in current theory and practice. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★○Sec 1, Th, 4:30-7, PeikH, Lum

Spring Qtr, ★○Sec 2, Arr, King

EdPA 5167 (formerly EdAd 5167) THE AMERICAN MIDDLE SCHOOL. 3 credits, §EdAd 5167, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Sources of the movement; purposes, functions, and limitations; fundamental problems, types, and curricular implications of reorganization. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★○Sec 1, Sa, 8-10:30 a.m., PeikH, Nickerson

EdPA 5173 CASE STUDIES FOR POLICY RESEARCH. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Introduction to the use of qualitative case study research method and its application to questions of educational practice. Class project required. Emphasis on design of studies that employ open-ended interviewing as primary data collection technique.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Must be taken A-F. (Prereq education or graduate student or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension Students)

Winter Qtr, ★○Sec 1, M, 4-6:30, PeikH, Turner

EdPA 5180 (formerly EdAd 5180) SEMINAR: ADMINISTRATION OF SPECIAL EDUCATION. 3 credits, §EdAd 5180, §EPsy 8760, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Problems of administration and organization of special education programs. (Prereq 5103 or EdAd 5103 or EPsy 5660 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★○Sec 1, M, 4:30-7, PeikH, Weatherman

EdPA 5181 (formerly EdAd 5181) SEMINAR: ADMINISTRATION OF SPECIAL EDUCATION. 3 credits, §EPsy 5181, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Problems of administration and organization of special education programs. (Prereq 5103 or EdAd 5103 or EPsy 5660 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★○Sec 1, M, 4:30-7, PeikH, Weatherman

EdPA 5182 (formerly SPFE 5182) COMPARATIVE PHILOSOPHIES OF EDUCATION. 3 credits, §SPFE 5182, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Examination of competing philosophies of education. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★○Sec 1, W, 4:30-7, PeikH, Lum

EdPA 5201 FORMAL ORGANIZATIONS IN EDUCATION. 3 credits, §EdAd 8201, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Introduction to classical and current theories of organizational behavior and administration in education. Leadership and control, communication, conflict, the effects of educational environments, organizational design and change, and organizational effectiveness. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, T, 4:30-7, NichH 201, Louis
Spring Qtr, ★○Sec 2, T, 4:30-7, PeikH, Turner

EdPA 5202 (formerly EdAd 5202/SPFE 5202) POLITICS OF EDUCATION. 3 credits, §EdAd 5202, §EdAd 8202, §SPFE 5202, §SPFE 8202, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Social science findings, concepts, and methods used to consider the political context of educational administration; emphasis on public school policy making by local and state governments; role of administrators. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, W, 4:30-7, PeikH 28, Mazzoni
Spring Qtr, ★○Sec 2, Sa, 10:30 a.m.-1, PeikH, Mazzoni

EdPA 5204 (formerly EdAd 5210) FINANCING ELEMENTARY AND SECONDARY SCHOOLS. 3 credits, §EdAd 5210, §8210, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Value assumptions and educational finance policy, economic factors, sources and characteristics of educational revenue, state and local distribution systems, federal support, urban/rural variations, institutional financing alternatives. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, Sa, 10:30 a.m.-1, PeikH 225, Mueller

Spring Qtr, ★○Sec 2, T, 7:30-10, PeikH, Mueller

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

EdPA 5209 (formerly SPFE 5209) EDUCATION IN FUTURE SOCIAL SYSTEMS. 3 credits, §SPFE 5209, §SPFE 5212, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Interdisciplinary inquiry into problems of social specialization and generalization; projections and analysis of long-range (30 years or more) social and technological trends related to education. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, Th, 4:30-7, PeikH 155, Harkins

EdPA 5210 (formerly SPFE 5210) SOCIAL FORECASTING AND EDUCATIONAL FUTURES. 3 credits, §SPFE 5210, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Application of social sciences in the academic and applied dimensions to formal education, including a social-scientific and systems orientation toward communities; emphasis on short-range social and educational planning—near-present to a few years hence. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★○Sec 1, W, 4:30-7, PeikH, Harkins

EdPA 5211 (formerly SPFE 5211) SOCIAL DESIGN AND EDUCATIONAL FUTURES. 3 credits, §SPFE 5211, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Medium-range interdisciplinary approach to community design and analysis emphasizing formal education systems in community context; focus upon new neighborhoods, towns, experimental cities and sub-cultural enclaves in rural and urban settings emphasizing time period from several years to 3 decades hence. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★○Sec 1, Th, 4:30-7, PeikH, Harkins

EdPA 5212 (formerly EdAd 5212) SCHOOL BUDGETING. 3 credits, §EdAd 5212, §EdAd 8212, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Concepts and skills involved in preparing financial budgets for public schools; competency in translating educational programs into budgetary systems, anticipating revenue receipts, planning expenditures, and techniques for preparing a balanced budget. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, W, 7:30-10, PeikH 46,

Sederberg

EdPA 5213 (formerly EdAd 5213) FINANCIAL RESOURCE MANAGEMENT. 3 credits, §EdAd 8213, §EdAd 5213, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Concepts and skills involved in the management of financial resources in public schools; performance exercises related to public school accounting systems, purchasing, the controller function, and reporting and interpreting school financial data. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★○Sec 1, M, 7:30-10, PeikH,

Sederberg

EdPA 5214 (formerly EdAd 5214) SCHOOL MANAGEMENT INFORMATION SYSTEMS. 3 credits, §EdAd 5214, §EdAd 8214, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Basic techniques required to generate, maintain, and make accessible computer-based management information system in education. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★○Sec 1, M, 7:30-10, PeikH,

Sederberg

EdPA 5215 (formerly EdAd 5215) THE ELEMENTARY SCHOOL PRINCIPALSHIP. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Problems in elementary school administration and the principal's role of leadership. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, T, 7:30-10, PeikH 46, Alkire

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

EdPA 5216 (formerly EdAd 5216) RECENT RESEARCH IN ELEMENTARY SCHOOL ADMINISTRATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Pertinent research literature. (Prereq 5215 or EdAd 5215. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)
Winter Qtr, ★●Sec 1, W, 7:30-10, PeikH, Alkire

EdPA 5222 INTRODUCTION TO POLICY RESEARCH. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Critical examination of the political, philosophical, environmental, and methodological issues that accompany policy research in education; particular consideration will be given to the determinants of the applicability of quantitative and qualitative methods. **May be taken S-N by graduate students only;** all others must take A-F. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★●Sec 1, T, 4:30-7, PeikH, Hendrix, Mazzoni
Spring Qtr, ★●Sec 2, W, 4:30-7, PeikH, Hendrix, Anderson

EdPA 5223 LAW AND THE HANDICAPPED: IMPLICATIONS FOR EDUCATION. 2-4 credits, §EPsy 5605, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Analysis of recent litigation and legislation; emphasis on implementation of right to education, right to treatment, labeling, due process, and related issues. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with EPsy 5605. A joint Day/Extension class limited to a combined total of 15 Extension students)

Spring Qtr, ★●Sec 1, T, 4:30-7, AndH 230, Hooker

EdPA 5224 (formerly EdAd 5224) LEGAL IMPLICATIONS OF ACTS BY SCHOOL BOARDS, ADMINISTRATORS, AND TEACHERS. 3 credits, §EdAd 5224, §EdAd 8224, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resi-

dent Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Constitutional, statutory, and common law bases of school administration; principles growing out of fundamental legal procedures. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★●Sec 1, M, 4:30-7, BlegH 135, Hooker

EdPA 5226 (formerly EdAd 5226) EDUCATIONAL FACILITIES PLANNING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Planning educational facilities for public and private school systems and institutions of higher education. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★●Sec 1, Th, 4:30-7, PeikH, Alkire

EdPA 5227 (formerly EdAd 5227) PUBLIC SCHOOL PERSONNEL PROGRAMS. 3 credits, §EdAd 5227, §EdAd 8227, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Selection, assignment, evaluation, and development of school personnel, salary and conditions of service; policies of administrative, instructional, and noninstructional personnel. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★●Sec 1, W, 4:30-7, PeikH 46, Alkire
Spring Qtr, ★●Sec 2, W, 7:30-10, PeikH, Alkire

EdPA 5240 SEMINAR: CLINICAL EXPERIENCES IN EDUCATIONAL ADMINISTRATION. 1-9 cr, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

For educational administration majors engaged in clinical experiences. **Must be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension Students)

Fall Qtr, ★●Sec 1, Th, 4:30-7, PeikH 33, Sederberg
Winter Qtr, ★●Sec 2, Th, 4:30-7, PeikH, Sederberg
Spring Qtr, ★●Sec 3, Th, 4:30-7, PeikH 215, Sederberg

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

EdPA 5250 (formerly EdAd 5250/HiEd 5250) AMERICAN HIGHER EDUCATION. 4 credits, §Educ 5250, §EdAd 5250, §HiEd 5250, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

American higher and postsecondary education in historical and contemporary perspective; special emphasis on societal and political demands on higher education system; consequent changes in its various forms and functions. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★●Sec 1, W, 4:30-7:50, NichH 109, Lewis

EdPA 5260 INTRODUCTION TO EDUCATIONAL PLANNING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Principles, tools, and emerging issues in higher and elementary/secondary education settings, including decision-making models, strategic planning, forecasting, program planning, and short-range planning. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★●Sec 1, W, 4:30-7, ChDev 216

EdPA 5264 (formerly EdAd 5264) THE SECONDARY SCHOOL PRINCIPALSHIP. 3 credits, §EdAd 5264, §EdAd 8264, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

The role of the principal: qualifications, duties, and problems, including current issues, and factors of staff and student relationships. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★●Sec 1, M, 7:30-10, PeikH 225, Nickerson

EdPA 5272 PROBLEMS: EDUCATIONAL ADMINISTRATION. 1-3 credits each quarter, §8272, §EdAd 8272, tuition*each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

For superintendents and principals qualified to make

intensive studies of a school system. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★●Sec 1, Arr

Winter Qtr, ★●Sec 2, Arr

Spring Qtr, ★●Sec 3, Arr

EdPA 5274 TWO-YEAR POSTSECONDARY INSTITUTIONS. 3 credits, §VoEd 5274, §EdAd 5274, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Present status, development, functions, organization, curriculum, and trends in postsecondary but nonbaccalaureate institutions. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with VoEd 5274. A joint Day/Extension class limited to a combined total of 15 Extension students)

Fall Qtr, ★●Sec 1, T, 4-6:30, PeikH 225, Turner

EdPA 5280 INTRODUCTION TO THE ECONOMICS OF EDUCATION. 4 credits, §SPFE 5180, §EdAd 5280, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Economic impact of education on educational markets, prices, and production relationships, distribution of income, and investment and cost-benefit analysis in education. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★●Sec 1, T, 4:30-7:50, PeikH, Lewis

EdPA 5281 ECONOMIC ANALYSIS IN EDUCATIONAL EVALUATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Use and application of cost-effectiveness, cost-benefit, cost-utility, and cost-feasibility in the evaluation of educational problems and programs. **Must be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★●Sec 1, W, 4:30-7, PeikH, Lewis

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

EdPA 5540 (formerly HiEd 5540) SEMINAR: THE COLLEGE STUDENT. 3 credits, §HiEd 5540, §PsyS 5540, §EPsy 5451, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Psychology and sociology of college students, research concerning diversity of populations, vocational development of students; student society, culture, mental health, underachievement, dropouts, values, and attitudes; relevant research methods. (Prereq 6 cr in psychology or educational psychology. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with EPsy 5451. A joint Day/Extension class limited to a combined total of 15 Extension students)

Spring Qtr, ★●Sec 1, Th, 4:30-7:15, EltH N647, Rest

EdPA 5603 (formerly AdEd 5603) INTERNATIONAL EDUCATION AND DEVELOPMENT. 3 credits, §AdEd 5603, §Educ 5603, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Contemporary theories relating formal and nonformal education to national development in social, cultural, political, and economic sectors; alternative conceptualizations and theoretical perspectives on education and development. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★●Sec 1, T, 4:30-7, PeikH 33

EdPA 5605 (formerly AdEd 5605) RESEARCH TOPICS: INTERNATIONAL DEVELOPMENT EDUCATION. 3 credits, §AdEd 5605, §Educ 5605, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Empirical research conducted in developing societies relating formal and nonformal education to national development in social, cultural, political, and economic sectors. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★●Sec 1, T, 4:30-7, PeikH, Cogan

EdPA 5607 (formerly AdEd 5607) APPLIED INTERNATIONAL DEVELOPMENT EDUCATION. 3 credits, §AdEd 5607, §Educ 5607, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Educational innovations designed to promote national development in selected developing nations; educational case studies in the context of such objectives; conceptualizations of the role of education in development and outcomes. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★●Sec 1, T, 4:30-7, PeikH

Day School Classes—In addition to the Extension classes listed above, day school classes are sometimes offered to educators during late afternoon, early evening, and weekend hours. For registration information about day school College of Education courses, see page 148 or call 625-6501.

Educational Psychology (EPsy)

(204 Burton Hall: 624-3543)

College of Education

Textbooks for most EPsy courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Psychology)

Brian Abery, Lecturer
William M. Ammentorp, Professor
William Bart, Professor
Sheldon Braaten, Lecturer
Sandra Christenson, Associate Professor
Josefina Colond, Lecturer
Ernest C. Davenport, Associate Professor
Mark Davison, Professor
Stanley Deno, Professor
Lynne K. Edwards, Associate Professor
V. Lois Erickson, Associate Professor
Christine Espin, Assistant Professor
Lynn Friedman, Assistant Professor
Joan Garfield, Adjunct Associate Professor
David Giese, Adjunct Professor
L. Sunny Hansen, Professor
Diane Holte, Teaching Specialist
C. P. Hooker, Professor Emeritus
Susan Hupp, Professor
David Johnson, Professor
Stephen Klein, Adjunct Assistant Professor
Marie Knowlton, Associate Professor

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Valerie Klanssek Kylo, Lecturer
Geoffrey Maruyama, Professor
Scott McConnell, Associate Professor
Mary McEvoy, Associate Professor
Sallye McKee, Assistant Professor
James Rest, Professor
John Romano, Associate Professor
Susan Rose, Associate Professor
John Rynders, Professor
S. Jay Samuels, Professor
Mary Schultz, Teaching Specialist
Robert Tennyson, Professor
James Terwilliger, Professor
Katherine Thomas, Adjunct Assistant Professor
James Turnure, Professor
Paulus van den Broek, Associate Professor
Richard Weatherman, Professor
Wayne Welch, Professor
Frank B. Wilderson, Jr., Professor
Frank Wood, Professor
Jennifer York, Assistant Professor

American Sign Language: 626-9392

Note: American Sign Language courses can be used to complete a second language requirement. Contact CEE Counseling (625-2500) with questions.

EPsy 1601 AMERICAN SIGN LANGUAGE I. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Introduces fundamentals of American Sign Language as a second language. Emphasis is placed on varieties of sign language and sign language practices, questions, commands, and simple sentences. Receptive and Expressive sign vocabulary building are featured.

May be taken S-N. (No prereq. Limited to 25)

Fall Qtr, ★Sec 1, M, 4:40-9, EltH N647
Fall Qtr, ★Sec 2, M, 4:40-9, FordH 115
Fall Qtr, ★Sec 3, MW, 3:35-5:50, AkerH 211
Fall Qtr, ★Sec 4, MWF, 9:05-10:35 a.m., EltH N647
Fall Qtr, ★Sec 5, MWF, 11:15 a.m.-12:45, EltH N647
Fall Qtr, ★Sec 6, TTh, 12:20-2:45
Fall Qtr, ★Sec 7, TTh, 12:20-2:45
Winter Qtr, ★Sec 8, MW, 3:35-5:50, AkerH 211
Winter Qtr, ★Sec 9, MWF, 11:15 a.m.-12:45
Winter Qtr, ★Sec 10, TTh, 7:50-10:05 a.m., EltH N647
Winter Qtr, ★Sec 11, Th, 4:40-9, EltH N647
Spring Qtr, ★Sec 12, M, 4:40-9, EltH N647
Spring Qtr, ★Sec 13, MWF, 11:15 a.m.-12:45
Spring Qtr, ★Sec 14, TTh, 7:50-10:05 a.m., EltH N647

EPsy 1602 AMERICAN SIGN LANGUAGE II. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Introduces fundamentals of American Sign Language as a second language beyond the basic level. Emphasis is placed on locatives, classifiers, and temporal and distributional aspects. Receptive and Expressive sign vocabulary building are featured at the conversational level. **May be taken S-N.** (Prereq 1601 or #. Limited to 25)

Fall Qtr, ★Sec 1, MWF, 10:10-11:30
Fall Qtr, ★Sec 2, MWF, 1:25-2:55, EltH N647
Fall Qtr, ★Sec 3, T, 4:40-9, EltH N647
Fall Qtr, ★Sec 4, TTh, 7:50-10:05 a.m., EltH N647
Winter Qtr, ★Sec 5, M, 4:40-9, EltH N647
Winter Qtr, ★Sec 6, M, 4:40-9, AkerH 313
Winter Qtr, ★Sec 7, MW, 3:35-5:50, AkerH 317
Winter Qtr, ★Sec 8, MWF, 9:05-10:35 a.m.
Winter Qtr, ★Sec 9, MWF, 11:15 a.m.-12:45
Winter Qtr, ★Sec 10, TTh, 12:20-2:35, EltH N647
Spring Qtr, ★Sec 11, MW, 3:35-5:50, AkerH 317
Spring Qtr, ★Sec 12, MWF, 9:05-10:35 a.m.
Spring Qtr, ★Sec 13, T, 4:40-9, AkerH 317
Spring Qtr, ★Sec 14, TTh, 7:50-10:05 a.m.

EPsy 1603 AMERICAN SIGN LANGUAGE III. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Expands on the conversational use of American Sign Language as a second language including grammar, deaf culture, short stories, and narratives. Receptive and Expressive use of ASL will be stressed at the conversational level. **May be taken S-N.** (Prereq 1602 or #. Limited to 25)

Fall Qtr, ★Sec 1, MW, 1:10-3:25
Fall Qtr, ★Sec 2, MWF, 9:05-10:35 a.m.
Fall Qtr, ★Sec 3, TTh, 8-10:15 a.m., BuH
Fall Qtr, ★Sec 4, TTh, 12:20-2:35
Fall Qtr, ★Sec 5, W, 4:40-9, EltH N647
Fall Qtr, ★Sec 6, Th, 4:40-9, EltH N647
Winter Qtr, ★Sec 7, MWF, 11:15-12:45
Winter Qtr, ★Sec 8, MWF, 9:05-10:35 a.m.
Winter Qtr, ★Sec 9, TTh, 7:50-10:05 a.m.
Winter Qtr, ★Sec 10, Th, 4:40-9, AkerH 313
Spring Qtr, ★Sec 11, MW, 1:10-3:25
Spring Qtr, ★Sec 12, MW, 3:35-5:50
Spring Qtr, ★Sec 13, MWF, 9:05-10:35 a.m.
Spring Qtr, ★Sec 14, MWF, 11:15 a.m.-12:45
Spring Qtr, ★Sec 15, W, 4:40-9, AkerH 211
Spring Qtr, ★Sec 16, Th, 4:40-9, AkerH 211

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

EPsy 3601 AMERICAN SIGN LANGUAGE IV. 5 credits, tuition*: Resident \$412.50; Non-resident \$1196.25.

Stresses conversational use of American Sign Language and culturally significant topics relating to the deaf community, complex use of ASL, grammatical features and vocabulary expansion. Comprehension and expression of jokes, dialogues, stories are emphasized. **May be taken S-N.** (Prereq 1603. Limited to 25)

- Fall Qtr, ★Sec 1, T, 4:40-9, JonesH 11
- Fall Qtr, ★Sec 2, TTh, 7:50-10:05 a.m.
- Winter Qtr, ★Sec 3, MW, 1:10-3:25
- Winter Qtr, ★Sec 4, MWF, 9:05-10:35
- Winter Qtr, ★Sec 5, T, 4:40-9, JonesH 11
- Winter Qtr, ★Sec 6, TTh, 7:50-10:05 a.m.
- Winter Qtr, ★Sec 7, TTh, 12:20-2:35
- Winter Qtr, ★Sec 8, Th, 4:40-9, JonesH 11
- Spring Qtr, ★Sec 9, MWF, 9:05-10:35 a.m.
- Spring Qtr, ★Sec 10, T, 4:40-9, JonesH 11
- Spring Qtr, ★Sec 11, TTh, 7:50-10:05
- Spring Qtr, ★Sec 12, Th, 4:40-9, AkerH 317

EPsy 3602 AMERICAN SIGN LANGUAGE V. 5 credits, tuition*: Resident \$412.50; Non-resident \$1196.25.

Stresses common conversational use of American Sign Language and culturally significant topics relating to the deaf community. Idiomatic use of sign in conversation and expansion of vocabulary are introduced. Comprehension and expression of common conversational topics and idiomatic expressions are emphasized. **May be taken S-N.** (Prereq 3601. Limited to 25)

- Fall Qtr, ★Sec 1, MWF, 9:05-10:35 a.m.
- Fall Qtr, ★Sec 2, MWF, 11:15 a.m.-12:45
- Fall Qtr, ★Sec 3, T, 4:40-9, JonesH 4
- Winter Qtr, ★Sec 4, TTh, 12:20-2:35
- Winter Qtr, ★Sec 5, TTh, 12:20-2:35
- Spring Qtr, ★Sec 6, MWF, 9:05-10:35 a.m.
- Spring Qtr, ★Sec 7, MWF, 11:15a.m.-12:45
- Spring Qtr, ★Sec 8, T, 4:40-9, JonesH 4
- Spring Qtr, ★Sec 9, TTh, 12:20-12:45, EltH N647
- Spring Qtr, ★Sec 10, TTh, 3:35-5:50
- Spring Qtr, ★Sec 11, Th, 4:40-9, AkerH 215

EPsy 3603 CULTURAL PERSPECTIVES OF DEAFNESS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75.

Provides an introduction to the deaf community, its social norms, values, and folklore. The international integration of social, religious, athletic, literary, and scholarly institutions are introduced. **May be taken S-N.** (Prereq 1603)

- Fall Qtr, Sec 1, M, 4:40-7:20, AmundH 158
- Fall Qtr, Sec 2, W, 4:40-7:20, CivMinE 214
- Winter Qtr Sec 3, M, 4:40-7:20, JonesH 4
- Winter Qtr, Sec 4, TTh, 9:05-10:20 a.m.
- Spring Qtr, Sec 5, Th, 4:40-7:20, CivMinE 214

EPsy 5110 INTELLIGENCE. 3 credits, §PsyF 5147, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Theories of intelligence and its development; implications for educational practices and psychological research. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

- Fall Qtr, ★OSec 1, Th, 4:30-7, BuH 125, Bart

EPsy 5112 KNOWING, LEARNING, AND THINKING. 4 credits, §PsyF 5152, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368. (IS)

Principles of human information processing; issues in memory and thought; discussion of mental operations in comprehension and understanding; analysis of intellectual structures supporting problem solving in applied settings. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

- Spring Qtr, ★OSec 1, W, 5:30-8:50, EltH N647, Samuels

EPsy 5113 INTRODUCTION TO THE PSYCHOLOGY OF INSTRUCTION. 3 credits, §PsyF 5153, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Survey of psychological factors in design of instruction; performance criteria, strategy, and sequence in contexts of research; development and implementation activities in instructional techniques, technolo-

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

gies, and delivery systems, psychological processes relevant to measures of effectiveness in teaching-learning environment. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, T, 4:15-6:45, EltH N647,
R Tennyson

EPsy 5114 PSYCHOLOGY OF STUDENT LEARNING. 3 credits, §PsyF 5182, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026. (IS)

Survey of psychological methods and principles; models of the learner; topics in development, creativity, intelligence, and motivation, implications for teaching and curriculum design in preschool, elementary, and secondary education; professional training with children and adolescents as clients. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★●Sec 1, W, 4:30-7, BuH 120,
van den Broek

Winter Qtr, ★●Sec 2, W, 4:30-7, BuH 120,
van den Broek

Spring Qtr, ★●Sec 3, W, 4:30-7, ChDev 105,
van den Broek

EPsy 5115 PSYCHOLOGY OF ADULT LEARNING. 4 credits, §PsyF 5183, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Survey of psychological methods and principles in human learning; models of the adult learner; topics in motivation, creativity, achievement, intelligence; implications of teaching and curriculum design in higher education, continuing education, and professional training. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★●Sec 1, T, 4:15-7:35, BuH 123

Spring Qtr, ★●Sec 2, T, 4:15-7:35, EltH N647,
R Tennyson

EPsy 5116 BEHAVIOR ANALYSIS IN EDUCATION. 4 credits, §PsyF 5149, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Practical applications of reinforcement theory; behavior analysis, precision teaching, programmed instruction. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 35 Extension students)

Fall Qtr, ●Sec 1, M, 4:40-8:30, FolH 50, Deno
Spring Qtr, ●Sec 2, M, 4:40-8:30, NichH 207

EPsy 5117 PROBLEM SOLVING AND DECISION MAKING. 4 credits, §PsyF 5570, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Literature from decision research contrasted with literature in problem solving from cognitive psychology and psychology of information processing; improvement in decision making through consideration of training, allocation of work, and decision aids. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ●Sec 1, Th, 4:15-7:35, BuH 123,
Tennyson

EPsy 5130 PERSONALITY AND SOCIAL DEVELOPMENT. 3 credits, §PsyF 5162, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Major concepts and research findings in adjustment and development with special emphasis on educational implications. **Must be taken A-F.** (Prereq 5 cr in introductory psychology. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 20 Extension students)

Winter Qtr, ★●Sec 1, T, 4:30-7, PeiKH 155

Spring Qtr, ★●Sec 2, W, 4:30-7, NichH 109

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

EPsy 5135 WORKSHOP IN HUMAN RELATIONS. 6 credits, \$PsyF 5305, tuition*: Resident \$495; Non-resident \$1435.50; Resident Graduate credit \$594; Non-resident Graduate credit \$1188; Resident Graduate School credit \$1026; Non-resident Graduate School credit \$2052.

An experientially based course including simulation activities, curriculum writing, and supervised practice in basic human relations skills emphasizing individual, cultural, and ethnic differences and their implications for educational practice. **Must be taken S-N.** (No prereq. Approved to meet State Department of Education requirement for licensure renewal. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)
Fall Qtr, ★Sec 1, M, 5-10, BuH 120, Maruyama
Spring Qtr, ★Sec 2, M, 5-10, BuH 120, Maruyama

EPsy 5150 SOCIAL PSYCHOLOGY OF EDUCATION. 3 credits, \$PsyF 5170, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Concepts and theories in the field applied to educational problems and settings; laboratory sessions to make applications and develop skills in group behavior. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★Sec 1, M, 4-6:30, PeikH 315,
D Johnson

EPsy 5221 BASIC PRINCIPLES OF MEASUREMENT. 3 credits, \$PsyF 5121, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Fundamental concepts, principles, and methods in educational and psychological measurement; educationally useful properties of tests; types and uses of derived scores; factors influencing reliability and validity. **May be taken S-N.** (Prereq EPsy 5260 or EPsy 8260 or PsyF 5110 or PsyF 8110. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★Sec 1, TTh, 4:15-5:30, ChDev 216,
Davenport

EPsy 5240 PRINCIPLES AND METHODS OF EVALUATION. 3 credits, \$PsyF 5125, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Introductory course in program evaluation; theory; practical examples, purpose, roles, program descriptions, and evaluation strategies. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★Sec 1, MW, 4:15-5:30, ChDev 216

EPsy 5260 INTRODUCTORY STATISTICAL METHODS. 4 credits, \$PsyF 5110, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Techniques for organizing and presenting data; descriptive indices of central tendency, variability and bivariate correlation/regression; procedures for making inferences concerning means and proportions. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 50)

Fall Qtr, ★Sec 1, T, 5:45-8:50, Arch 50

Fall Qtr, ★Sec 2, MW, 4:15-6, NichH 213,

Davenport. *A joint Day/Extension class limited to 10 Extension students*

Winter Qtr, ★Sec 3, TTh, 4:15-6, NichH 109,

Garfield. *A joint Day/Extension class limited to 5 Extension students*

Winter Qtr, ★Sec 4, W, 5:45-8:50, Arch 35

Spring Qtr, ★Sec 5, MW, 4-5:45, WullH 130,

Davenport. *A joint Day/Extension class limited to 10 Extension students*

Spring Qtr, ★Sec 6, W, 5:45-8:50, Arch 10

EPsy 5401 COUNSELING PROCEDURES. 3 credits, \$PsyS 5110, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

For persons whose professional work includes counseling and interviewing; not for licensure as school counselor. Emphasis on counseling relationship and principles of interviewing; case studies, role playing and demonstration. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 18 Extension students)

Fall Qtr, ★Sec 1, M, 4:15-6:45, BuH 125, Klein

Winter Qtr, ★Sec 2, T, 4:15-6:45, BuH 120,
Erickson

Spring Qtr, ★Sec 3, M, 4:15-6:45, BuH 125

(See also Family Social Science)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

EPsy 5430 FOUNDATIONS OF CAREER DEVELOPMENT. 3 credits, §PsyS 5210, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Introduction to theory, research, practice; examination of concepts of work, work values, career and career education; application of theory and research to career guidance practice in educational, industrial, and community agency settings. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 18 Extension students) Fall Qtr, ★●Sec 1, T, 4:15-6:30, BuH 125, Hansen

EPsy 5432 CAREER DEVELOPMENT PROGRAMS AND ORGANIZATIONAL CHANGE. 3 credits, §PsyS 5332, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Provides knowledge and skills to create and implement career programs for a variety of populations and settings; a life-roles concept of career integrated with a systematic model of program development; the consultation process, organizational intervention, and race, age, and gender issues. **Must be taken A-F.** (Prereq EPsy 5431 or 5430 or PsyS 5210 or PsyS 5331 or equivalent or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 18 Extension students)

Spring Qtr, ★●Sec 1, T, 4:15-6:45, BuH 125, Hansen

EPsy 5433 DEVELOPMENTAL CAREER COUNSELING OF WOMEN. 3 credits, §PsyS 5310, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Counseling skills and interventions to facilitate the career development of girls and women at different life stages; the sex role system, female socialization and stereotyping; facts, myths, and trends regarding women's changing roles in a technological society; issues of sexism in strategies and programs. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 35)

Spring Qtr, ★Sec 1, W, 4:15-6:30, BuH 125

EPsy 5434 COUNSELING ADULTS IN TRANSITION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Theoretical and empirical knowledge to provide bases for analyzing adaptation to transitions; applications of counseling intervention and training in coping skills to cases of life change. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 18 Extension students) Fall Qtr, ★●Sec 1, W, 4:15-6:45, BuH 125, Romano

EPsy 5451 SEMINAR: THE COLLEGE STUDENT. 3 credits, §PsyS 5540, §HiEd 5540, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Psychology and sociology of college students; research concerning diversity of populations, vocational development of students, student society, culture, mental health, underachievement, dropouts, values and attitudes; relevant research methods. **Must be taken A-F.** (Prereq 6 credits psych or ed psych. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with EdPA 5540. A joint Day/Extension class limited to a combined total of 10 Extension students)

Spring Qtr, ★●Sec 1, Th, 4:30-7:15, EltH N647, Rest

EPsy 5461 CROSS-CULTURAL COUNSELING. 3 credits, §PsyS 5505, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Effect of cross-cultural and cross-national differences in counseling processes. **Must be taken A-F.** (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 35)

Fall Qtr, ★Sec 1, M, 6-8:30, BuH 123, Thomas

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

EPsy 5600 CHILDHOOD LANGUAGE DEVELOPMENT: CLASSROOM IMPLICATIONS. 3 credits, \$PsyS 5100, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Recent trends and findings in the study of language acquisition; classroom implications for the education of exceptional children. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Th, 4:40-7:30, NichH 207,

Turnure

Spring Qtr, ●Sec 2, T, 4:40-7:30, NichH 207,

Turnure

EPsy 5601 EDUCATION OF EXCEPTIONAL CHILDREN. 4 credits, \$PsyS 5101, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Introduction to field of special education for classroom teachers and other school personnel. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, M, 4:40-8:30, NichH 109, McKee

Spring Qtr, ●Sec 2, W, 4:40-8:30, NichH 207,

McKee

EPsy 5604 TRANSITION FROM SCHOOL TO WORK AND COMMUNITY LIVING FOR PERSONS WITH SPECIAL NEEDS. 4 credits, \$PsyS 5104, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Organization and design of training programs to promote independent living and the vocational and community adjustment of persons with disabilities and other at-risk populations; curriculum materials; methods, and organizational strategies for adolescent and adult learners, families, and community service providers. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 20 Extension students)

Spring Qtr, ★●Sec 1, W, 4:40-8:30, PeikH 215

EPsy 5605 LAW AND THE HANDICAPPED: IMPLICATIONS FOR EDUCATION. 2-4 credits, \$EdPA 5223, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Analysis of recent litigation and legislation; emphasis on implementation of right to education, right to treatment, labeling, due process, and related issues.

Must be taken A-F. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with EdPA 5223. A joint Day/Extension class limited to a combined total of 10 Extension students)

Spring Qtr, ★●Sec 1, T, 4:30-7, AndH 230,

Hooker

EPsy 5607 COLLABORATION FOR INCLUSIVE SCHOOL COMMUNITIES. 3 credits, \$PsyS 5107, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Rationale for, implications of, and strategies for including students with unique needs (e.g., disabilities) in general education classroom settings. The importance of creating a sense of community among students and adults in today's heterogeneous classrooms and schools is emphasized. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, T, 4:40-7:30, ChDev 216,

York

EPsy 5608 PARENT AND PROFESSIONAL PLANNING FOR HANDICAPPED STUDENTS. 3 credits, \$PsyS 5108, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Study and demonstration of constructive approaches to cooperative planning and implementation of education programs by parents, teachers, and persons involved with children who have special needs. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ★●Sec 1, Th, 4:40-7:30, BuH 120

Spring Qtr, ★●Sec 2, Th, 4:40-7:30, Arch 35,

Wilderson

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

EPsy 5609 FAMILY-PROFESSIONAL PLANNING FOR PERSONS WITH SEVERE HANDICAPS. 3 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Interdisciplinary course examining the needs of families including children with severe handicaps; emphasis on life cycle needs, service issues, programs of support from infancy through adult years, services from different agencies, disciplines, professional requirements, and responsibilities in serving families. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 30 Extension students)

Winter Qtr, ★●Sec 1, W, 4:40-7:30, PeikH 215, McEvoy

EPsy 5612 EDUCATION OF LEARNING-DISABLED CHILDREN. 3 credits, \$PsyS 5112, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Analysis of considerations in design and conduct of services for learning-disabled children; approaches to education of such children. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 30 Extension students)

Fall Qtr, ★●Sec 1, Th, 4:40-7:30, ChDev 218, Espin

Winter Qtr, ★●Sec 2, T, 4:40-7:30, NichH 209, Deno

EPsy 5615 EDUCATIONAL INTERVENTIONS FOR LEARNING DISABILITIES. 3 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Planning, implementing, evaluating academic programs for students with disabilities in written and spoken language, quantitative concepts, and cognitive skills required for learning. **Must be taken A-F.** (Prereq 5612 or PsyS 5112. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 30 Extension students)

Winter Qtr, ★●Sec 1, Th, 4:40-7:30, BuH 125, Espin

Spring Qtr, ★●Sec 2, T, 4:40-7:30, BuH 120, Espin

EPsy 5620 INTRODUCTION TO MENTAL RETARDATION. 4 credits, \$CPsy 5315, \$PsyS 5120, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Issues relating to educational practices; community planning; educational philosophy, administration and organization, and programming. **Must be taken A-F.** (Prereq 5601 or PsyS 5101 or equivalent. Meets concurrently with CPsy 5315. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to a combined total of 25 Extension students)

Winter Qtr, ★●Sec 1, W, 4:40-8:30, ChDev 218, Turnure

EPsy 5621 METHODS AND MATERIALS FOR ELEMENTARY AND SECONDARY MENTALLY RETARDED PUPILS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Curriculum content, materials, and methods of instruction for educable mentally retarded children; preparation of units and development of teaching aids. **May be taken S-N.** (Prereq 5601 or PsyS 5101 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, Th, 4:40-8:30, ChDev 105, Rynders

EPsy 5622 PROGRAMS AND CURRICULA FOR LEARNERS WITH SEVERE HANDICAPS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Elementary/secondary program design and curricula for learners with severe handicaps. Emphasis on preparing children and youth for integrated, normalized community environments in domestic, leisure, and vocational domains. Discussion of developmentally appropriate programming. Structured observation of learners with severe handicaps required. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, T, 4:10-7:30, NichH 209, Hupp

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

EPsy 5624 BIOMEDICAL ASPECTS OF PHYSICAL IMPAIRMENTS. 3 credits, §PsyS 5124, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Selected information in genetics; anatomy, physiology, and kinesiology; central and peripheral nervous system; prenatal, perinatal, and postnatal development; physically disabling conditions; and management and educational procedures. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ○Sec 1, T, 4:40-7:30, BuH 123, York

EPsy 5625 EDUCATION OF HANDICAPPED INFANTS AND PRESCHOOL CHILDREN. 4 credits, §PsyS 5125, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Issues, problems, and practical applications in designing strong programs for young children with all types of handicapping conditions. **Must be taken A-F.** (Prereq 5601 or 5620 or PsyS 5101 or PsyS 5120 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ○Sec 1, W, 4:40-8:30, PeikH 215, Rynders

EPsy 5626 INSTRUCTION FOR LEARNERS WITH SEVERE HANDICAPS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Data-based strategies for school and non-school instruction, including basic measurement principles; assessment, design, implementation, and evaluation of instruction; concept and task analysis; natural and instructional cues, corrections, consequences. **May be taken S-N.** (Prereq 5622, and 5116. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ○Sec 1, T, 4:10-7:30, BuH 123, Colond

EPsy 5635 EDUCATION OF STUDENTS WITH PHYSICAL DISABILITIES. 4 credits, §PsyS 5135, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Characteristics and abilities; methods and materials for training; observation of teaching situations involving these groups; personal consultation in addition to class hours. **May be taken S-N.** (Prereq 5601 or PsyS 5101 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ○Sec 1, W, 4:40-8:30, PeikH 315

EPsy 5636 EDUCATION OF MULTI-HANDICAPPED LEARNERS WITH SENSORY IMPAIRMENTS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Characteristics of learners with visual and auditory impairments. Design of instructional programs to remediate or circumvent disabilities, including the use of prosthetic devices. Consideration of related areas of performance that may be affected by sensory impairments. **May be taken S-N.** (Prereq 5601 or PsyS 5101. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ○Sec 1, M, 4:10-6:40, PeikH 225

EPsy 5640 PSYCHOSOCIAL AND EDUCATIONAL ASPECTS OF DEAFNESS. 3 credits, §PsyS 5140, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Historical and current societal perceptions of the deaf; analysis of effects and patterns of auditory impairment on children and adults; intelligence, personal and social adjustment, effect of the psychological processes on acquisition of language, speech, and speechreading skills. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ○Sec 1, W, 4:40-7:30, NichH 209A, Kyllö

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

EPsy 5641 MODELS OF SERVICE DELIVERY TO STUDENTS WITH HEARING IMPAIRMENTS. 3 credits, §PsyS 5141, 5144, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Programmatic and systems of support for infants, children, and youth with hearing impairments; educational delivery system models, curriculum and material adaptation, and consultation skills. **Must be taken A-F.** (Prereq 5644, PsyS 5144, or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ●Sec 1, M, 4:40-7:30, Arch 20, Kyllo

EPsy 5643 LANGUAGE FOR HEARING IMPAIRED CHILDREN. 4 credits, §PsyS 5143, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Study of functional language development in communicatively handicapped persons; overview of language curricula and programming strategies, pertinent research and models of instruction for use in the educational environment. **Must be taken A-F.** (Prereq 5640 or PsyS 5140. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, T, 4:40-8:30, NichH 209A, Rose

EPsy 5644 LANGUAGE PROGRAMMING FOR CHILDREN WITH HEARING IMPAIRMENTS. 3 credits, §PsyS 5144, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Programs and practices focusing on the development of language in infants, children, and youth with hearing impairments; comparative study of language development of hearing impaired and hearing persons. **Must be taken A-F.** (Prereq 5643, PsyS 5143, or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, M, 4:40-7:30, ChDev 216, Rose

EPsy 5646 READING AND INSTRUCTIONAL PRACTICES WITH HEARING-IMPAIRED STUDENTS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Focuses on the knowledge and skills required to assess, plan, and implement instruction for individuals with hearing impairments. Emphasis is placed on the theoretical and pragmatic issues in the acquisition of reading and writing skills, curricular adaptations, and effective instructional approaches used with hearing-impaired learners. **Must be taken A-F.** (Prereq 5643, PsyS 5143, or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, T, 4:40-8:30, NichH 207, Schultz

EPsy 5647 AURAL AND SPEECH PROGRAMMING FOR CHILDREN WITH HEARING IMPAIRMENTS. 4 credits, §PsyS 5147, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Fundamentals of the speech and hearing mechanisms; survey of instructional practices, technology-based assistive devices to develop auditory and speech skills. Strategies to adapt to the classroom acoustic environment. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ●Sec 1, W, 4:40-8:30, ChDev 216, Rose

EPsy 5648 MODES OF COMMUNICATION FOR THE HANDICAPPED. 3 credits, §PsyS 5148, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Theoretical and applied study of selection and application of alternative communication modalities; assessment and development of modes including gestures, speech reading, cued speech, sign systems, form boards, and Bliss-symbolics. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, Th, 4:40-7:30, FolH 116, Rose

* Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

EPsy 5651 MANAGING PROBLEM BEHAVIOR IN THE CLASSROOM. 3 credits, §PsyS 5151, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Typical patterns of problem behavior in classroom settings; relationships to teacher mental health; simulation of methods for prevention and management. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, W, 4:30-7:30, Roseville Area HS, Braaten

Spring Qtr, Sec 2, W, 4:30-7:30, Roseville Area HS, Braaten

EPsy 5656 EDUCATIONAL NEEDS OF STUDENTS WITH EMOTIONAL DISTURBANCE OR BEHAVIORAL DISORDERS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Preparation for specialists: Educational characteristics, educational interventions, teaching of social behavior, legal and ethical issues. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 25 Extension students)

Fall Qtr, ★○Sec 1, W, 4:40-7:30, PeikH 155, F Wood

Winter Qtr, ★○Sec 2, M, 4:40-7:30, PeikH 215, F Wood

EPsy 5657 EDUCATIONAL INTERVENTIONS FOR STUDENTS WITH EMOTIONAL DISTURBANCE OR BEHAVIORAL DISORDERS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Preparation for specialists: Assessment and planning procedures, interagency cooperation, career preparation and transition for EBD students. **Must be taken A-F.** (Prereq 5656. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 25 Extension students)

Winter Qtr, ★○Sec 1, W, 4:40-7:30, PeikH 155, F Wood

Spring Qtr, ★○Sec 2, M, 4:40-7:30, PeikH 215, F Wood

EPsy 5660 SUPERVISION AND ADMINISTRATION OF SPECIAL EDUCATION. 3 credits, §PsyS 5160, §EdPA 5103, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Procedures in establishing and improving educational programs for exceptional children. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with EdPA 5103. A joint Day/Extension class limited to a combined total of 10 Extension students)

Fall Qtr, ★○Sec 1, M, 4:30-7, NichH 122, Weatherman

Spring Qtr, ★○Sec 2, W, 4:30-7, NichH 209, Ammentorp, Weatherman

EPsy 5671 LITERARY BRAILLE. 3 credits, §PsyS 5171, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Mastery of literary Braille code; analysis of specialized equipment emphasizing use of Braille writers, slates, and computers for Grade 2 Braille transcriptions. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ★Sec 1, Th, 4:40-7:30, BuH 123, Knowlton

EPsy 5672 ADVANCED BRAILLE. 3 credits, §PsyS 5172, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Mastery of Nemeth Code of mathematics, introduction to foreign languages, computer notation and consideration of Braille textbook formats and techniques; consideration of music Braille. **Must be taken A-F.** (Prereq 5671 or PsyS 5171. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ★Sec 1, Th, 4:40-7:30, BuH 125, Knowlton

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

EPsy 5680 EDUCATION OF THE DISADVANTAGED. 3 credits, §PsyS 5180, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Educational needs of children handicapped by behavior related to deficiencies of physical and/or cultural environment; adaptations of educational programs. **Must be taken A-F.** (Prereq 12 credits in sociology, psychology, educational psychology. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 20 Extension students)

Winter Qtr, ★●Sec 1, W, 4:40-7:30, BuH 125, McKee

EPsy 5681 METHODS AND MATERIALS FOR HANDICAPPED INFANTS AND PRESCHOOL CHILDREN. 3 credits, §PsyS 5181, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Methods, materials, conceptual models for maximizing educational development of young children with all types of handicapping conditions. **Must be taken A-F.** (Prereq 12 cr in education or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ★●Sec 1, M, 4:40-7:30, NichH 209, McEvoy

EPsy 5700 ASSESSMENT AND DECISION MAKING IN SPECIAL EDUCATION. 3 credits, §PsyS 5200, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

For teachers and other educational personnel; identifying the needs of handicapped students; planning, monitoring, evaluating instructional programs; practice in use of standardized devices and development of clinical measures for handicapped students. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 40 Extension students)

Winter Qtr, ★●Sec 1, M, 4:40-7:30, ChDev 218, Deno

Spring Qtr, ★●Sec 2, T, 4:40-7:30, PeikH 315, Deno

EPsy 5701 PRACTICUM: SPECIAL EDUCATION. Credits arr, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Supervised experience in teaching or related work in schools or other agencies serving exceptional children. **Must be taken S-N.** (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Espin

Fall Qtr, ●Sec 2, Knowlton

Fall Qtr, ●Sec 3, Rose

Fall Qtr, ●Sec 4, Wilderson

Winter Qtr, ●Sec 5, Espin

Winter Qtr, ●Sec 6, Knowlton

Winter Qtr, ●Sec 7, Rose

Winter Qtr, ●Sec 8, Wilderson

Spring Qtr, ●Sec 9, Espin

Spring Qtr, ●Sec 10, Knowlton

Spring Qtr, ●Sec 11, Rose

Spring Qtr, ●Sec 12, Wilderson

EPsy 5702 WORKSHOP: SPECIAL EDUCATION: Improving ASL for Classroom Communication. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Supervised experience in teaching or related work in schools or other agencies serving exceptional children. *Focus this offering:* American Sign Language form. Improving vocabulary production, and use of ASL phrase structure rules and other grammatical features needed by professionals working with children who are deaf. **Must be taken S-N.** (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, M, 4:40-6:30, ChDev 105

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

EPsy 5703 PRACTICUM EXPERIENCE: SPECIAL EDUCATION. Credits arr, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Supervised experience in teaching or related work in schools or other agencies serving exceptional children. **Must be taken A-F.** (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, arr, Hupp
 Fall Qtr, ●Sec 2, arr, McEvoy
 Fall Qtr, ●Sec 3, arr, Rynders
 Winter Qtr, ●Sec 4, arr, Hupp
 Winter Qtr, ●Sec 5, arr, McEvoy
 Winter Qtr, ●Sec 6, arr, Rynders
 Spring Qtr, ●Sec 7, arr, Hupp
 Spring Qtr, ●Sec 8, arr, McEvoy
 Spring Qtr, ●Sec 9, arr, Rynders

EPsy 5704 WORKSHOP: INTERVENTIONS AND PRACTICES IN EDUCATIONAL AND HUMAN SERVICE PROGRAMS. Credits arr, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Concepts, issues, and practices; development of educational and psychological support services in school and human service settings. For practicing professionals. **Must be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Arr, Abery
 Winter Qtr, ●Sec 2, Arr, Abery
 Spring Qtr, ●Sec 3, Arr, Abery

EPsy 5710 CONTEMPORARY SERVICES FOR PERSONS WITH DEVELOPMENTAL DISABILITIES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Survey course focusing on the characteristics and service needs of persons with substantial developmental disabilities using multidisciplinary approaches. Addresses changing concepts, models of services, issues related to promoting the independence, productivity, and integration of persons with developmental disabilities into the community. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 25 Extension students)

Fall Qtr, ★●Sec 1, T, 4:40-7:30, PeikH 215, York

EPsy 5849 ASSESSMENT OF THE PRE-SCHOOL CHILD. 3 credits, \$PsyS 5549, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Review of assessment of children ages 0-5 from a developmental perspective; overview of normal and abnormal development; issues and techniques in cognitive, social, and emotional assessment; early education programs. **May be taken S-N.** (Prereq statistics or measurement course or grad course in assessment. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ●Sec 1, Th, 4:40-7:30, NichH 109

EPsy 5900 INDEPENDENT STUDY: EDUCATION, HUMAN DEVELOPMENT, AND SPIRITUALITY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

A course designed to raise key questions for inquiry on the nature of self, processes of current education, and ways spirituality is experienced and understood. Participants will be asked to engage questions with open inquiry; current sources in Educational Psychology and related disciplines will be considered for recent trends and directions. Course assignments will include guest lectures, group discussion, and written responses to key themes on the topic. (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, M, 4:30-7, ChDev 218, Erickson, Wood

Electrical Engineering (EE)

(4-174 EE/CSci: 625-3300)

Institute of Technology

Textbooks for most EE courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Dave Lo, Adjunct Professor of Electrical Engineering
 Robert Oswald, Unisys Corporation

The Department of Electrical Engineering makes no academic distinction between students in day class and evening class sections. All students in a given course have the same examinations and are assigned course grades from a common standard. The final examination is administered at the time specified for the day section, and is announced the first class

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

session. Students unable to take the final at the scheduled time must drop the course and will have tuition and fees fully reimbursed.

Through registration in Extension Classes, students will be able to complete most credits, but not all credits, toward a bachelor's degree in Electrical Engineering (check with the Extension Counseling Department, 625-2500). The degree then may be completed after a limited amount of day school attendance. Students admitted to IT must have an adviser and get approval of their one-year plan.

Except under unusual circumstances, the curriculum which applies to an E.E. major at the time of admission to the Upper Division shall be considered to specify the course requirements for graduation for a period up to four years. Thus, after admission to the Upper Division, a student is generally insulated from any change in degree requirements for a maximum of four years, although the student always has the option of satisfying the requirements in effect at the time of program completion.

A student may *not* transfer upper division courses (courses numbered 3000 or higher, except for EE 3009, EE 3010, EE 3351, and EE 3352) into the E.E. degree program unless he or she was admitted to the Upper Division in the Electrical Engineering Curriculum before taking the course or courses and the course or courses have had the written prior approval of the student's E.E. adviser. Extension courses taken while a student is on academic probation may not be applied toward graduation requirements or removal of probationary conditions without the explicit prior permission of the Electrical Engineering Scholastic Standards Committee. It is the responsibility of the student to follow those rules.

Students interested in the degree should see the Degrees and Certificates section of this Bulletin.

Senior Design Project—See EE 5450 below.

EE 0001 REFRESHER COURSE FOR ELECTRICAL ENGINEERS. No credit, tuition*: \$140. A review of electrical engineering fundamentals required to pass the Minnesota Professional Engineering Examination in electrical engineering. It is designed to aid the electrical engineer to prepare for the P.E. examination by presenting an organized review of material ordinarily contained in an electrical engineering college curriculum. The primary emphasis is on problem solving with orientation as close as possible to the type of question contained in the examination. (Prereq B.S. in electrical engineering, passing the E.I.T. examination, and four years of electrical engineering experience)

Winter Qtr, Sec 1, Th, 6:20-8:40, EE/CSci 3210

EE 1400 CIRCUITS LABORATORY. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Laboratory to accompany 3009 and 3010. (Prereq IT student, 3009 or ¶3009. Each section limited to 14) Spring Qtr, ★Sec 1, M, 8:10-9:55, EE/CSci 3170 Spring Qtr, ★Sec 2, W, 8:10-9:55, EE/CSci 3170

EE 3009 LINEAR CIRCUITS I. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Physical principles underlying the modeling of circuit elements. Two- and three-terminal resistive elements, Kirchoff's laws. Simple resistive circuits. Linearity in circuits. First-order circuits. Circuits in sinusoidal steady state. (Prereq IT student, Math 3321 or ¶Math 3321, Math 3321 [or Math 3212 or 3221], Phys 1281 or ¶Phys 1281. Limited to 56)

Spring Qtr, ★Sec 1, MW, Lect, 6:10-8:10, EE/CSci 3125

EE 3010 LINEAR CIRCUITS II. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Energy and power in AC circuits. Transformers. Laplace transform techniques of circuit analysis. Frequency response. Two ports. (Prereq IT student, at least C grades in 3009, Math 3321 [or Math 3212 or 3221], Phys 1291 or ¶Phys 1291. Limited to 75)

Fall Qtr, ★Sec 1, TTh, 6:10-8:10, EE/CSci 3125

EE 3011 SIGNAL ANALYSIS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Fourier methods of analysis. Laplace transforms and applications. Z-transforms. Frequency and time-domain responses. (Prereq upper division EE major; 3010. Limited to 75)

Winter Qtr, ★Sec 1, TTh, 6:10-8:10, EE/CSci 3125

EE 3012 SYSTEM DESIGN. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Continuous, discrete-time systems. Feedback: stability, applications. (Prereq upper division EE major, 3011, Math 3321 [or 3213 or 3221]. Limited to 75)

Spring Qtr, ★Sec 1, TTh, 6:10-8:10, EE/CSci 3125

EE 3060 SEMICONDUCTOR DEVICES. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Elementary semiconductor physics; physical description of pn junction diodes, bipolar junction transistors and field-effect transistors. (Prereq upper division EE or CSci or ME major, 3010 or ¶3010, Phys 1291. Limited to 75)

Fall Qtr, ★Sec 1, MW, 6:10-8:10, MechE 202

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* Tuition definitions of Resident and Non-resident explained on page 22.

EE 3061 ANALOG ELECTRONICS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Small signal models for the BJT and FET. Elementary amplifiers. Differential and operational amplifiers; applications. (Prereq upper division EE or CSci or ME major, 3010, 3060, 3400 or ¶3400. Limited to 75) Winter Qtr, ★Sec 1, MW, 6:10-8:10, MechE 212

EE 3062 DIGITAL ELECTRONICS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Stability and feedback amplifiers, operational amplifier structures; implementation of digital circuits with bipolar and field-effect transistors; application to inverters, gates, flip-flops, logic arrays, and storage elements. (Prereq upper division EE or CSci or ME major, 3061, 3351, 3401 or ¶3401. Limited to 75) Spring Qtr, ★Sec 1, MW, 6:10-8:10, MechE 202

EE 3110 ELECTRIC AND MAGNETIC FIELDS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Field properties of electricity and magnetism. Interaction with dielectric and magnetic materials. (Prereq upper division EE or ME major, at least C grades in Phys 1291, Math 3331 or ¶3331 [or Math 3212 or 3231]. Limited to 75)

Winter Qtr, ★Sec 1, MW, 6:10-8:10, EE/CSci 3125

EE 3111 ELECTROMAGNETIC WAVES. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Time-varying electromagnetic fields. Propagation and reflection of electromagnetic waves. Metallic and optical waveguides. (Prereq upper division EE major, 3110. Limited to 75)

Spring Qtr, ★Sec 1, MW, 6:10-8:10, MechE 212

EE 3351 INTRODUCTION TO LOGIC DESIGN. 4 credits, tuition*: Resident \$330; Non-resident \$957. (IS)

Boolean algebra and logic gates. Combinational logic: simplification and design examples. Sequential logic and design of synchronous sequential logic systems. Integral laboratory. (Prereq sophomore standing in IT. Sec 1, 2 and 3 lectures meet concurrently. Each section limited to 24)

Winter Qtr, ★Sec 1, M, Lect, 6:10-8:40, EE/CSci 3210; T, Lab, 6:10-8:10, EE/CSci 2178

Winter Qtr, ★Sec 2, M, Lect, 6:10-8:40, EE/CSci 3210; W, Lab, 6:10-8:10, EE/CSci 2178

Winter Qtr, ★Sec 3, M, Lect, 6:10-8:40, EE/CSci 3210; Th, Lab, 6:10-8:10, EE/CSci 2178

EE 3352 INTRODUCTION TO MICROPROCESSORS. 4 credits, tuition*: Resident \$330; Non-resident \$957. (IS)

Basic computer organization and assembly language programming. Instruction types and addressing modes. Subroutines. Assembler usage. Programming techniques. Integral laboratory. (Prereq sophomore standing in IT, CSci 3104. Sec 1, 2 and 3 lectures meet concurrently. Each section limited to 16)

Spring Qtr, ★Sec 1, M, Lect, 6:10-8:40, EE/CSci 3210; T, Lab, 6:10-8:10, EE/CSci 3130

Spring Qtr, ★Sec 2, M, Lect, 6:10-8:40, EE/CSci 3210; W, Lab, 6:10-8:10, EE/CSci 3130

Spring Qtr, ★Sec 3, M, Lect, 6:10-8:40, EE/CSci 3210; Th, Lab, 6:10-8:10, EE/CSci 3130

EE 3400-3401-3402 JUNIOR ELECTRICAL ENGINEERING LABORATORY. 2 credits each quarter, tuition* each quarter: Resident \$165; Non-resident \$478.50.

Experiments in circuits, electronics, and electromagnetic fields. (Prereq EE major, 1400, 3060 or ¶3060 for 3400...3400, 3011 or ¶3011, 3061 or ¶3061 for 3401...3401, 3062 or ¶3062 for 3402 or #. Each section limited to 14)

Fall Qtr, 3400, ★Sec 1, Th, 6:10-9:10, EE/CSci 3166

Winter Qtr, 3401, ★Sec 1, Th, 6:10-9:10, EE/CSci 3166

Spring Qtr, 3402, ★Sec 1, Th, 6:10-9:10, EE/CSci 3166

EE 5055 INSTRUMENTATION AND CONTROL ELECTRONICS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Characteristics of operational amplifiers; applications of operational amplifiers including A-D and D-A converters; compensation of operational amplifiers; power amplifiers, semiconductor controlled rectifiers, applications; linear and switching regulators; noise in electronic circuits. This course is offered through Extension Classes once every four years. See *EE 5056 laboratory below*. (Prereq upper division EE major or grad IT major, 3012 or ¶3012, 3062 or #. May not be taken for graduate credit. Limited to 65)

Fall Qtr, ★Sec 1, TTh, 6:10-7:50, EE/CSci 3111

EE 5056 ELECTRONIC CIRCUITS LABORATORY. 1 credit, tuition*: Resident \$82.50; Non-resident \$239.25.

Experiments in instrumentation and control electronics to accompany EE 5055. This course is offered through Extension Classes once every four years. (Prereq upper division EE major or grad IT major, 5055 or ¶5055 or #. May not be taken for graduate credit. Limited to 12)

Fall Qtr, ★Sec 1, M, 6:10-9:10, EE/CSci 3144

Fall Qtr, ★Sec 2, W, 6:10-9:10, EE/CSci 3144

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

EE 5253 LINEAR CONTROL SYSTEMS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75. Modeling, characteristics, and performance of feedback control systems. Stability, root-locus, and frequency-response methods. Compensator design. This course is offered through Extension Classes once every four years. See *EE 5291 laboratory below*. (Prereq upper division EE major or grad IT major, 3012 or #. May not be taken for graduate credit. Limited to 65)

Winter Qtr, ★Sec 1, T, 6:10-8:40, EE/CSci 3115

EE 5255 DIGITAL CONTROL SYSTEMS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75. Time- and frequency-domain analysis of discrete-time and digital control systems. Data conversion and interfacing. Digital computers as control system components. Software and hardware considerations in digital control system design. This course is offered through Extension Classes once every four years. See *EE 5290 laboratory below*. (Prereq upper division EE major or grad IT major, 3351, 3352 or equivalent, 5002 or ¶5002, 5253 or #. May not be taken for graduate credit. Limited to 65)

Spring Qtr, ★Sec 1, T, 6:10-8:40, EE/CSci 3111

EE 5290 DIGITAL CONTROL SYSTEMS LABORATORY. 1 credit, tuition*: Resident \$82.50; Non-resident \$239.25.

This course is offered through Extension Classes once every four years. (Prereq upper division EE major or grad IT major, 3402 or ¶3402, 5255 or ¶5255, 5291. May not be taken for graduate credit. Limited to 8)

Spring Qtr, ★Sec 1, W, 6:10-8:40, EE/CSci 2188

Spring Qtr, ★Sec 2, Th, 6:10-8:40, EE/CSci 2188

EE 5291 LINEAR CONTROL SYSTEMS LABORATORY. 1 credit, tuition*: Resident \$82.50; Non-resident \$229.25.

This course is offered through Extension Classes once every four years. (Prereq upper division EE major or grad IT major, 3402 or ¶3402, 5253 or ¶5253. May not be taken for graduate credit. Limited to 8)

Winter Qtr, ★Sec 1, W, 6:10-8:40, EE/CSci 2188

Winter Qtr, ★Sec 2, Th, 6:10-8:40, EE/CSci 2188

Senior Design Project—The following course is required for the completion of a degree in electrical engineering. It is offered only through day school registration. Enrollment is limited. Call 625-3300, Department of Electrical Engineering, for further information.

EE 5450 SENIOR DESIGN PROJECT. 2 degree credits. Team participation in formulation and solving of open-ended design problems. Oral and written presentations. (Prereq EE senior, 3012, 3062, 3110, 3351, 3352, 3402)

Elementary Education (Elem)

(125 Peik Hall: 625-6372)

College of Education

(Department of Curriculum and Instruction)

Textbooks for most Elem courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Enrollments in limited classes in this department are strictly enforced. Neither the department nor the course instructor will give written permission for registration in these classes once the limit is reached and the class closes. However, you may check for openings in day school.

Patricia G. Avery, Associate Professor
L. JoAnne Buggey, Lecturer
John J. Cogan, Professor
Donald A. Fondrick, Teaching Specialist
Harlan S. Hansen, Professor
Patricia A. Heller, Associate Professor
Karen N. Hoyle, Professor
Roger T. Johnson, Professor
Helen L. Jorstad, Associate Professor
John C. Manning, Professor
Dianne Monson, Professor
Margaret Y. Phinney, Assistant Professor
Thomas R. Post, Professor
James Stochl, Professor
Barbara M. Taylor, Professor
Susan M. Watts, Assistant Professor

International Internships and Study Abroad

Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

Master's Degree—A Master of Education degree with a focus in Teacher Leadership is available through the departments of Curriculum and Instruction and Educational Policy and Administration. For more information, see page 125.

These courses are subject to frequent changes in time and rooms. Check for correct day, time, and room in a day school class schedule.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Elem 5100 ELEMENTARY SCHOOL CURRICULUM. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Selection and organization of subject matter for courses; methods, problems, and finding of research by subjects. **Must be taken A-F.** (Prereq 3101. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★●Sec 1, T, 4:30-7, PeikH 46, Buggey

Elem 5107 DIAGNOSIS AND TREATMENT OF LEARNING DIFFICULTIES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Diagnosis of pupil difficulty; development and prevention; tests as aids to teaching; following up a testing program; socio-emotional problems associated with learning difficulties. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★●Sec 1, M, 4:30-7, PeikH 48, Watts

Elem 5145 CLASSROOM MANAGEMENT. 3 credits, §SeEd 5145, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

For teachers, administrators, and support staff working in elementary school programs; focus on management of student behavior, of instruction as it relates to student behavior, and of teacher organizational tasks within the classroom. **Must be taken A-F.** (Prereq tchg or admin exper or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★●Sec 1 T 4:30-7, PeikH 28, H Hansen

Elem 5164 GLOBAL EDUCATION: CONTENT AND PROCESS. 3 credits, §SeEd 5164, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Designed to help classroom teachers and administrators assess current methods and materials and select appropriate evaluation instruments by examination of existing content and methods in global education. **Must be taken A-F.** (No prereq. Qualified students

may register for graduate credit at the University of Minnesota. Meets concurrently with SeEd 5164. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★●Sec 1, W, 4:30-7, PeikH 155, Cogan

Elem 5191 THEMATIC INSTRUCTION FOR MIDDLE SCHOOLS. 2 credits, §Educ 5191, §AdEd 5191, §SeEd 5291, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Logical and contextual relationships among mathematics, science, and social studies as taught in middle schools. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with AdEd 5191 and SeEd 5291. A joint Day/Extension class limited to 4 Extension Students)

Fall Qtr, ★Sec 1, M, 4:30-7, PeikH 325, Buggey

Elem 5225 THE MULTICULTURAL GENDER FAIR CURRICULUM. 4 credits, §SeEd 5225, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Planning for development and implementation of a multicultural and gender-fair perspective in elementary and secondary classrooms. Developing individual teacher goals, exploring professional issues, and acquiring resources and teaching strategies for successfully exploring new perspectives. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with SeEd 5225. A joint Day/Extension class limited to 6 Extension Students)

Spring Qtr, ★Sec 1, W, 3:35-8, PeikH 315, Avery

Elem 5300 LITERATURE FOR THE ELEMENTARY SCHOOL. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Evaluative survey of books for children; research related to children's reading interests; selection of literature. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★●Sec 1, T, 4:30-7, PeikH 315, Monson

Spring Qtr, ★●Sec 2, M, 4:30-7, PeikH 315, Monson

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Elem 5305 SURVEY OF SPECIAL COLLECTIONS IN CHILDREN'S LITERATURE. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Content and accessibility of collections that relate to the creation of books; emphasis on possibilities and methods for interpreting the content of the collections to children. **Must be taken A-F.** (Prereq 5300 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★○Sec 1, W, 6:30-9, BuH 123, Hoyle

Elem 5315 TEACHING COMPOSITION IN THE ELEMENTARY SCHOOL. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Theory and research dealing with the writing process and application to development of an elementary school writing curriculum. **Must be taken A-F.** (Prereq postbaccalaureate, MEd, or graduate student. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★○Sec 1, Th, 4:30-7, PeikH 225,
Phinney

Spring Qtr, ★○Sec 2, T, 4:30-7, PeikH 225,
Phinney

Elem 5316 TEACHING AND SUPERVISION OF ENGLISH IN THE ELEMENTARY SCHOOL. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Improvement of instruction, study of trends in English education. **Must be taken A-F.** (Prereq 3316 or elementary teaching experience. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★○Sec 1, W, 4:30-7, PeikH 225, Phinney

Spring Qtr, ★○Sec 2, Th, 4:30-7, PeikH 225,
Phinney

Elem 5319 TEACHING SECOND LANGUAGES AND CULTURES IN ELEMENTARY SCHOOLS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Methods and materials; developing oral and written communication; consideration of alternatives in program format; preparation of materials; global awareness and cross-cultural experience; assessing children's language; children's literature, games, songs; developing units and lessons. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 20 Extension students)

Fall Qtr, ★○Sec 1, Sa, 9-11:30 a.m., PeikH 215,
Jorstad

Elem 5320 PRACTICUM: TEACHING SECOND LANGUAGES AND CULTURES IN ELEMENTARY SCHOOLS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Minimum of three hours weekly of supervised teaching and observation in elementary schools. **Must be taken S-N.** (Prereq 5319 or 5319, #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★○Sec 1, Arr, Jorstad

Winter Qtr, ★○Sec 2, Arr, Jorstad

Spring Qtr, ★○Sec 3, Arr, Jorstad

Elem 5331 TEACHING AND SUPERVISION OF READING IN THE ELEMENTARY SCHOOL. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Objectives, materials, and teaching procedures; current practices and curricula; class and individual projects. **Must be taken A-F.** (Prereq 9 cr in education. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★○Sec 1, M, 4:30-7, PeikH 48, Watts

Spring Qtr, ★○Sec 2, W, 4:30-7, PeikH 48, Watts

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Elem 5334 READING DIFFICULTIES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Causes, prevention, and correction; remedial practices useful to the classroom teacher, school counselor, and reading specialist. **Must be taken A-F.** (Prereq 5331 or SeEd 5344. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★○Sec 1, W, 4:30-7, PeikH 46, Taylor

Elem 5337 BEGINNING READING INSTRUCTION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

For teachers and specialists interested in initial teaching procedures; compares alternative methods of beginning instruction; emphasis on readiness programs, test-grouping patterns, language factors, and intensive instruction procedures to prevent reading failure. **Must be taken A-F.** (Prereq 3331 or elem teacher or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★○Sec 1, T, 4:30-7, PeikH 48, Manning
Winter Qtr, ★○Sec 2, T, 4:30-7, PeikH 46,

Manning

Elem 5338 TEACHING READING IN THE INTERMEDIATE GRADES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

For teachers and specialists interested in problems of teaching reading beyond the decoding stage; emphasis on comprehension strategies, basic study skills, and reading in the content areas. **Must be taken A-F.** (Prereq 3331 or elem teacher or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★○Sec 1, M, 4:30-7, PeikH 48, Watts

Elem 5339 WORKSHOP: CURRENT TRENDS IN ELEMENTARY SCHOOL READING PROGRAMS. 1-9 credits (max 9 cr). 1 credit this offering, tuition*: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Offered via interactive television between two sites, with students at both locations. Several significant curriculum shifts are currently affecting beginning reading/literacy classroom practice. Notions of emergent literacy, developmentally appropriate activities, whole language and whole class instruction, and greater uses of children's literature have unsettled traditional notions of direction instruction of vocabulary, the use of basal readers, intra-classroom grouping, the role of specific reading skill instruction, and textbook adjustment to pupil instructional reading level. As a result, current teacher classroom practice in reading appears tenuous, common classroom assessment through oral reading occurs very infrequently, student book level placement particularly in the primary grades seems unreasonably low, and little directed instruction in word recognition can be observed. This workshop will examine these concerns and propose strategies for accommodating newer classroom approaches with existing reading programs. **Must be taken A-F.** (Prereq elementary school teaching experience or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 35)

Fall Spec Term, ★Sec 1, Sa, 8:30 a.m.-4:30, Nov.

6, PeikH, Manning. *No late fee through Oct. 29.*

Elem 5348 WORKSHOP: OUTDOOR SCIENCE EDUCATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

(No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Spec Term, ★○Sec 1, F, 6-9, Jan. 28,

Woodlake Nature Center,

Richfield, Fondrick, Johnson; SaSu, 8:30 a.m.-4:30,

Jan. 29, 30, Woodlake Nature Center, Richfield;

F, 6-9, Feb. 25, Long Lake Conservation Center,

Aitkin, Minn.; SaSu, 8:30 a.m.-4:30, Feb. 26, 27,

Long Lake Center, Aitkin, Minn.; M, 6-9, Mar.

8, Woodlake Nature Center, Richfield. *No late*

fee through Jan. 21

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Elem 5350 ELEMENTARY SCHOOL SCIENCE: MATERIALS AND RESOURCES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Experiences in the use of educational materials and media common to the teaching of modern elementary school science. **Must be taken A-F.** (Prereq 5349. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★○Sec 1, M, 4:30-7, PeikH 385, Johnson
Spring Qtr, ★○Sec 2, T, 4:30-7, PeikH 385, Johnson

Elem 5361 TEACHING SOCIAL STUDIES IN THE ELEMENTARY SCHOOL. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Content and organization of social studies programs; programs of understanding, improving the learning situation, and effective use of materials. **Must be taken A-F.** (Prereq 3101 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★○Sec 1, T, 4:30-7, PeikH 155, Cogan
Spring Qtr, ★○Sec 2, M, 4:30-7, PeikH 155, Cogan

Elem 5376 CURRENT TRENDS IN EARLY CHILDHOOD EDUCATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Continuing needs of children in our changing culture; current practices and recent research. **Must be taken A-F.** (Prereq teaching experience in kindergarten or primary or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★○Sec 1, M, 4:30-7, PeikH 28, H Hansen
Winter Qtr, ★○Sec 2, M, 4:30-7, PeikH 28, H Hansen

Elem 5377 EARLY CHILDHOOD EDUCATION: MATERIALS AND RESOURCES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Experience in the selection and use of commercial and teacher-made educational materials and media common to early childhood education programs. **Must be taken A-F.** (Prereq 3377 or 5376 and teaching experience. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★○Sec 1, M, 4:30-7, PeikH 28, H Hansen

Elem 5378 CONTEMPORARY PROGRAMS FOR YOUNG CHILDREN. 1-3 credits (maximum 3 cr). 3 credits this offering, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Child growth and development aspects of preschool children in light of need for curriculum intervention programs; current trends, program evaluation, recent research. **Must be taken A-F.** (Prereq MEd student in early childhood education. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★Sec 1, TTh, 4:45-6:15, NichH 209A
Spring Qtr, ★Sec 2, TTh, 3:30-5, NichH 216

Day School Classes—In addition to the Extension classes listed above, day school classes are sometimes offered to educators during late afternoon, early evening, and weekend hours. For registration information about day school College of Education courses, see page 148 or call 625-6501.

Special Offerings—A variety of courses and workshops in elementary education are available to local school districts which wish to jointly design continuing education experiences to meet local staff needs. Such offerings are limited only by the personnel resources of the College.

For further information about planning individually designed courses or workshops contact: Department Chair, Department of Curriculum and Instruction, University of Minnesota, 145 Peik Hall, 159 Pillsbury Drive S.E., Minneapolis, MN 55455. Telephone: 625-1362.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Employee Benefits Specialist

(See Industrial Relations, page 232)

Engineering

Engineering—Extension Classes and the Institute of Technology offer regular IT classes in several areas of engineering. These are listed under Aerospace Engineering and Mechanics, Civil Engineering, I of T, Electrical Engineering, Industrial Engineering/Operations Research, Materials Science and Engineering, and Mechanical Engineering. See also related science offerings in Chemistry, Computer Science, Mathematics, and Physics.

Engineering refreshers and special classes—In addition to regular IT classes, Extension Classes and the Institute of Technology offer a number of refresher and noncredit special classes in engineering and science to meet the needs of the practicing engineer. Check the Institute of Technology listing for I of T 0001, **Fundamentals of Engineering Review**, which is the refresher course for the Engineer-in-Training Examination (E.I.T.). For information on advanced Professional Engineer (P.E.) review courses, see listings for CE 0005, EE 0001, and ME 0001C.

Further details may be obtained by contacting the Office of Student Affairs, Institute of Technology, 105 Lind Hall, 207 Church Street S.E., University of Minnesota, Minneapolis, Minnesota 55455; (612) 624-5091.

Continuing Education programs in engineering and science—For students wishing to pursue extended coherent programs in engineering and science, several have been developed. Your attention is called to the Undergraduate Development Certificate series in Engineering and Science pages 491, 492. For further information, call CEE Counseling, 625-2500.

Please see the following departmental listings for course offerings:

Aerospace Engineering and Mechanics
Chemistry
Civil Engineering
Computer Science
Electrical Engineering
Engineering English (Composition and Communication)
Engineering Graphics (Mechanical Engineering)
Geological Engineering (Civil Engineering)
Industrial Engineering/Operations Research
Institute of Technology
Mathematics
Mechanical Engineering

Materials Science and Engineering
Physics
(See also Comp 3031, Technical Writing for Engineers)

Engineering Graphics

See Mechanical Engineering

English

(207 Lind Hall: 625-3363)

College of Liberal Arts

Textbooks for most Engl and EngW courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Composition and Communication; and Interdepartmental Study courses, page 244)

Your attention is called to the Master of Arts in English. See the Degrees and Certificates section of this Bulletin.

Christopher Anson, Associate Professor
Sonia Appar, Lecturer
Lillian Bridwell-Bowles, Associate Professor
Robert Brown, Associate Professor
Michael Dennis Browne, Professor
Thomas Clayton, Professor
Lonnie Durham, Assistant Professor Emeritus
Margery Durham, Associate Professor Emeritus
M. J. Fitzgerald, Associate Professor
Norman Fruman, Professor
Philip Furia, Professor
Arthur Geffen, Associate Professor
David Haley, Associate Professor
Gordon Hirsch, Professor
Karen Hoyle, Professor
Dennis Hurrell, Professor Emeritus
Archibald I. Leyasmeyer, Associate Professor
David Luke, Assistant Professor
Andrew MacLeish, Professor
Valerie Miner, Associate Professor
John O'Brien, Lecturer
Marc Penka, Teaching Assistant
Edward Savage, Professor Emeritus
Robert Solotaroff, Professor
Madelon Sprengnether, Professor
David Sproule, Lecturer
Ellen Stekert, Professor
Nancy Stenson, Assistant Professor of Linguistics
Charles Sugnet, Associate Professor
Joel Weinsheimer, Professor
George T. Wright, Regents' Professor

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

A major in English can be completed in the evening.

Interested students should discuss plans with an adviser (625-4592). (See the Degrees and Certificates section of this Bulletin for information on a master's degree in English)

B.A. Major Sequence

Required Preparatory Courses—To be considered for acceptance into the major, all students must present the following: evidence of status as a College of Liberal Arts (CLA) student; a minimum of 60 degree credits; a minimum of 16 credits in English and/or English Writing course work (not including required composition courses); and an English GPA of 2.50. The prerequisite English courses must include at least one 4-credit 3000-level literature course, preferably Engl 3008, Techniques of Literary Study. It is *highly recommended* that prospective majors apply for full major status *before* they enroll in 5000-level courses. It is necessary for students to have full major status before they can request a place in the required senior seminar course, Engl 3960.

Students who declare English as their major objective will be classified as "pre-Engl" until they meet the above prerequisites, apply formally for major status following the written procedures available in the English Undergraduate Studies Office, and are accepted by the faculty admissions committee. Written procedures require applicants to submit a portfolio of writing samples, including at least one paper written in a 3000-level English literature course. To request complete information, call the Undergraduate Studies Office at (612) 625-4592, or write Department of English, 207 Lind Hall, 207 Church Street S.E., Minneapolis, MN 55455.

Deadlines for application—The Friday of the first full week of each quarter (fall, winter, spring) annually. No applications are reviewed in the summer.

Upon admission, students will plan their programs in conference with a departmental major adviser.

Major Requirements—Twelve 4-credit courses in English, English Writing, or Composition (beyond those taken to satisfy the current CLA composition requirement) and Engl 3961 (1 cr), including eight 3xxx or 5xxx courses and three 5xxx courses. (Three courses may be graded "S".) Beyond the common requirements to be taken by all majors, there are three concentrations, each with specific requirements. For more information about each concentration, inquire in 209 Lind Hall.

Independent Study credits are limited to 12 and no more than 4 Extension Independent Study credits may be at the 3xxx or 5xxx level.

Common Requirements: 3008; one course in Shakespeare (3241 or 3242 or 3243); major paper through Engl 3961 (1 cr) registration, written in conjunction with 3960, according to guidelines in the English Major Handbook.

Requirements for Concentrations:

General Literary Studies—

Two 3xxx or 5xxx courses in British literature before 1900

One 3xxx or 5xxx course in British or American literature after 1900

One 3xxx or 5xxx course in the study of language or literary theory

Engl 3960 Junior-Senior Seminar

Engl 3961 (1 cr) Senior Paper or Engl 3963H (4 cr) Honors Thesis for summa cum laude candidates

Five elective courses, four of which must be at least 3xxx level

Students will complete three 5xxx-level courses

Students are strongly encouraged to take a course in literature of American minorities as one of their electives

Pre-Secondary Education—

Two 3xxx or 5xxx courses in British literature before 1900

Two 3xxx or 5xxx courses in American literature. Students are strongly encouraged to take a course in literature of American minorities as one of these courses

Two 3xxx or 5xxx courses in the study of the English language

One 3xxx-level course in composition (in addition to the CLA requirement)

Engl 3960 Junior-Senior Seminar

Engl 3961 (1 cr) Senior Paper or Engl 3963H (4 cr) Honors Thesis for summa cum laude candidates

Two 3xxx or 5xxx elective courses

Students will complete three 5xxx-level courses

Recommended nonmajor electives: Continental, Classic, and/or Western literature; Spch 3411 or 5411

Graduate/Pre-Professional—

3004

Two "age" courses in British literature before 1900: 3115, 3116, 3117, 3118, 3119

Chaucer (5221) or Milton (5261)

One 3xxx or 5xxx courses in American Literature

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

One 3xxx or 5xxx course in the study of the English language

One 3xxx or 5xxx course in literary theory Engl 3960 Junior-Senior Seminar Engl 3961 (1 cr) Senior Paper or Engl 3963H (4 cr) Honors Thesis for summa cum laude candidates

Two 3xxx-level or 5xxx-level elective courses
Students will complete three 5xxx-level courses
Students are strongly encouraged to take a course in literature of American minorities as one of their electives. They also are encouraged to take a second Shakespeare course and The King James Bible as Literature

The Senior Project may be written in conjunction with a Junior-Senior Seminar, or as an independent study project under the supervision of a faculty member

All majors will find additional suggestions and guidelines applicable to specific concentrations in the English Major Handbook and in individual handouts obtainable in the Undergraduate Studies Office, 209 Lind Hall.

Major project: Major paper written in conjunction with 3960, according to the guidelines in the English Major Handbook, available in the Undergraduate Studies Office, 209 Lind Hall.

You need not be majoring in English to register for these classes.

A Master of Arts in English can be completed in the evening. See the degrees section of this bulletin for further information.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in English. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

English language and literature courses (Engl)

(Creative writing and editing classes begin on page 182. See other literature courses in Afro-American and African Studies; American Studies; Classical Studies; Comparative Literature; French; General College; German; Humanities; Philosophy; Slavic Languages; Spanish; The Compleat Scholar; and Women's Studies)

Continuing Education for Women (CEW) sections available in the following courses: Engl 3412, 3455, 3851

Engl 1005 INTRODUCTION TO THE STUDY OF LITERATURE. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Understanding and enjoying literature. Readings of novels, short stories, poems, and plays. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, T, 6:20-8:50, LindH 217

Fall Qtr, ★Sec 2, W, 6:20-8:50, LindH 217

Winter Qtr, ★Sec 3, M, 6:20-8:50, LindH 229

Winter Qtr, ★Sec 4, Th, 6:20-8:50, LindH 229

Spring Qtr, ★Sec 5, M, 6:20-8:50, LindH 305

Spring Qtr, ★Sec 6, Th, 6:20-8:50, LindH 305

Engl 1016 INTRODUCTION TO AMERICAN LITERATURE. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Critical discussion of and writing about selected works of American literature. Typical authors: Poe, Hawthorne, Whitman, Dickinson, Twain, Frost, Fitzgerald. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, M, 6:20-8:50, LindH 215

Winter Qtr, ★Sec 2, T, 6:20-8:50, LindH 215

Spring Qtr, ★Sec 3, W, 6:20-8:50, LindH 215

Engl 1018 INTRODUCTION TO MODERN FICTION. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Critical discussion of and writing about selected modern novels and stories. Works are selected each quarter from authors such as Atwood, Drabble, Cather, Ellison, Hemingway, Joyce, Kingston, Lawrence, Morrison, Murdoch, Silko, Woolf, and others. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, Th, 6:20-8:50, LindH 203

Winter Qtr, ★Sec 2, W, 6:20-8:50, LindH 229

Spring Qtr, ★Sec 3, T, 6:20-8:50, LindH 229

Engl 1069 GREAT PLAYS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Introduction to some of the world's great plays, from ancient Greece to our own culture. Plays represent a variety of countries, periods, and theatrical modes. (No prereq. Limited to 40)

Spring Qtr, ★Sec 1, Th, 6:20-8:50, LindH 203, Geffen

Engl 1591 LITERATURE OF AMERICAN MINORITIES. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Representative works by Afro-American, American Indian, Asian American, and Chicano/Chicana writers. Examination of relevant social factors. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, T, 6:20-8:50, LindH 215

Spring Qtr, ★Sec 2, W, 6:20-8:50, Arch 45

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Engl 1671 THE SHORT STORY. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Lecture introduction to short stories, with some emphasis on the history and diversity of the form. Typical authors: Poe, Chekhov, Lawrence, Joyce, Kafka, Welty, Faulkner. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, Th, 6:20-8:50, LindH 217

Winter Qtr, ★Sec 2, M, 6:20-8:50, LindH 217

Spring Qtr, ★Sec 3, T, 6:20-8:50, LindH 215

(See also CSch 0443, *Forgotten Heirlooms: Short Stories of Famous Victorian Novelists*)

Study in London—English literature and drama courses are offered every spring quarter in the Literature and Theatre in London program. For information, call the Global Campus at 625-3379.

Engl 3008 TECHNIQUES OF LITERARY STUDY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Training and practice in the analysis of various literary forms, with a special emphasis upon poetry. Use of argument, evidence and documentation in literary papers; introduction to major developments in contemporary criticism. (No prereq. Limited to 30)

Winter Qtr, ★Sec 1, Th, 6:20-8:50, FordH 115,
Brown

Spring Qtr, ★Sec 2, M, 6:20-8:50, LindH 217

Engl 3118 THE ROMANTIC AGE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Major and representative works of the romantic period (1798-1832). Typical authors: Blake, Wordsworth, Coleridge, Byron, Shelley, Keats. (No prereq. Limited to 40)

Spring Qtr, ★Sec 1, W, 6:20-8:50, LindH 229,
Fruman

Engl 3241 SHAKESPEARE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Plays from Shakespeare's early and middle periods. All sections read *A Midsummer Night's Dream*, *Hamlet*, a history play, and three or four others. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, W, 6:20-8:50, LindH 302, L
Durham

Winter Qtr, ★Sec 2, W, 6:20-8:50, LindH 302

Spring Qtr, ★Sec 3, Th, 6:20-8:50, LindH 302, M
Durham

Engl 3242 SHAKESPEARE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Plays from the middle and late periods. All sections read *King Lear*, *Macbeth*, *The Tempest*, and three or four other plays. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, M, 6:20-8:50, LindH 229, Hurrell

Fall Qtr, ★Sec 2, Th, 6:20-8:50, LindH 229, Sugnet

Winter Qtr, ★Sec 3, T, 6:20-8:50, LindH 229, Luke

Spring Qtr, ★Sec 4, M, 6:20-8:50, LindH 229,
Hirsch

Engl 3251 THE KING JAMES BIBLE AS LITERATURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Narrative art and poetry in Old and New Testaments; Pentateuch, historical narratives, and the writings (including Psalms, Proverbs, Job, Song of Solomon, Ruth, Lamentations, Ecclesiastes, Esther, and Daniel). (No prereq. Limited to 40)

Winter Qtr, ★Sec 1, W, 6:20-8:50, LindH 217,
Haley

Engl 3252 THE KING JAMES BIBLE AS LITERATURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Narrative art and poetry in Old and New Testaments; Prophets, Apocrypha, and New Testament. (No prereq. Limited to 40)

Spring Qtr, ★Sec 1, T, 6:20-8:50, LindH 217,
Haley

Engl 3412 SURVEY OF AMERICAN LITERATURE (1850-1900). 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Historical survey of important authors, intellectual currents, movements, conventions, genres, and themes. Lecture course, with wide reading. Thoreau and Melville through James. (No prereq. Limited to 45)

Fall Qtr, ★Sec 1, M, 1-3:30, MacP, Penka. *Offered through Continuing Education for Women*

Engl 3413 SURVEY OF AMERICAN LITERATURE (1900-1945). 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Historical survey of important writers, intellectual currents, movements, conventions, genres, and themes. Lecture course, with wide reading. Stephen Crane through World War II. (No prereq. Limited to 40)

Spring Qtr, ★Sec 1, W, 6:20-8:50, LindH 302,
Solotaroff

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Engl 3455 AMERICAN SHORT STORY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Typical authors: Irving, Poe, Hawthorne, Twain, Crane, Cather, Faulkner, Welty, Bellow. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, M, 6:20-8:50, FordH 349, Solotaroff
Spring Qtr, ★Sec 2, M, 1-3:30, MacP, Whitman
(Limit 45). *Offered through Continuing Education for Women*

Spring Qtr, ★Sec 3, M, 6:20-8:50, LindH 302, Furia

Engl 3851 THE ENGLISH LANGUAGE. 4 credits, \$5851, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Introduction to the English language including English grammars, phonetics and phonology, British and American dialects, and native-language acquisition. (No prereq. Limited to 60)

Fall Qtr, ★Sec 1, M, 6:20-8:50, Phys 210, Anson

Winter Qtr, ★Sec 2, M, 1-3:30, MacP, Apgar
(Limit 45). *Offered through Continuing Education for Women*

Winter Qtr, ★Sec 3, M, 6:20-8:50, LindH 203,
Bridwell-Bowles

Spring Qtr, ★Sec 4, W, 6:20-8:50, Arch 50, Brown

(See also REX 0902, The Origin of English Words)

Engl 3852 ASPECTS OF THE ENGLISH LANGUAGE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

English grammar, phonetics and phonology, regional and social dialects. The application of these aspects of English linguistics to the analysis of specific literary texts. (No prereq. Limited to 30)

Spring Qtr, ★Sec 1, M, 6:20-8:50, LindH 215,
Bridwell-Bowles

Engl 3860 TOPICS IN THE ENGLISH LANGUAGE: AMERICAN LITERACY AND CULTURAL DIVERSITY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Links academic study with service learning through a unique arrangement with local community service agencies. Students study a range of perspectives on the nature, acquisition, and present state of literacy in the U.S. with special focus on issues of culturally diverse and disadvantaged members of society. Topics include development of literacy as a function of culture; nature of dialect communities and relationship of dialects to American schooling; bilingualism and language policy (especially educational) in U.S.; language, gender, and the educational process; and the politics of language relative to the institution of education. Participants are required to tutor children

at a local agency for a minimum of two hours a week and reflect on their experiences in logs and class discussion. Tutoring arrangements provided in class. (No prereq. Limited to 30)

Spring Qtr, ★Sec 1, M, 6:20-8:50, LindH 203,
Anson

Engl 3910 TOPICS IN ENGLISH AND NORTH AMERICAN LITERATURE: MYTH IN CELTIC LITERATURE. 4 credits. **Not offered 1993-94.**

Early literature of the Celts (the Irish, Welsh, Scots, and Bretons), with its great story cycles centered around gods and goddesses, heroes, and legendary kings and saints, is a narrative and mythological force which is by no means spent in the present day. The characters, motifs, and symbolism of these myths, whose roots lie in the prehistoric period, have, like the characters in the stories themselves, reincarnated again and again to influence European literature—the Arthurian cycle, the Ossian poems, the work of Joyce and Yeats. Focus of course is the original Irish and Welsh material (in English translation), its nature, and its meaning. (No prereq. Limited to 30)

Engl 3910 TOPICS IN ENGLISH AND NORTH AMERICAN LITERATURE: THE INTERNATIONAL SHORT STORY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Short stories from around the world. Authors include Achebe, Calvino, Garcia-Marquez, Jolley, Lawrence, Munro, Tan. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, T, 6:20-8:50, LindH 302, M
Durham

Engl 3910 TOPICS IN ENGLISH AND NORTH AMERICAN LITERATURE: GAELIC IRELAND. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Translations of literature written in modern Irish provide a view of the history, culture, and social institutions of the Irish-Gaeltacht (Irish-speaking districts). Focus is on the period from 17th century, when the collapse of the old social order began to accelerate under pressure from the newer English rulers to the contemporary period. Themes include those of loss and exile, cultural clashes in the changing social order, rooms and effects of adaptation and modernization in society, and role of literature (oral and written) in Gaeltacht culture. (No prereq. Limited to 30)

Winter Qtr, ★Sec 2, W, 6:20-8:30, LindH 203,
Stenson

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Engl 3960 JUNIOR-SENIOR SEMINAR: WORDSWORTH AND COLERIDGE: The Symbiosis of Genius. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Wordsworth and Coleridge were responsible for the Romantic Revolution in England, which radically redirected the course of English literature and critical theory. Their friendship, beginning in their middle twenties, was the most intellectually and aesthetically productive in European literary history. Seminar focuses on the spectacular decade of 1797-1807, during which almost all their great work was written, but will glance also at Coleridge's immensely influential late critical writings. (Prereq English major status, completion of Comp 3011 or 3012 or 3013, jr or sr and written Δ. Limited to 17)

Fall Qtr, Sec 1, T, 6:20-8:50, LindH 229, Fruman

Engl 3961 SENIOR PAPER. 1 credit, tuition*: Resident \$73.50; Non-resident \$213.15.

Required of English majors, usually taken in the senior year. May be taken concurrently with 3960. **Must be taken S-N.** Interested students should call the English department at (612) 625-4592 with questions. (Prereq English major, sr, Engl 3960, or 3931-3932, or EngW 3960; written Δ)

Fall Qtr, Sec 1, Arr

Engl 5151 18TH-CENTURY ENGLISH NOVEL. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Novels by such authors as Defoe, Richardson, Fielding, Smollett, Sterne, Austen. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Fall Qtr, ★Sec 1, T, 6:20-8:50, LindH 305, Weinsheimer

Engl 5152 19TH-CENTURY ENGLISH NOVEL. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Novels by such authors as Scott, Dickens, the Brontës, Thackeray, Eliot, and Hardy. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Spring Qtr, ★Sec 1, M, 6:20-8:50, FordH 150, Luke

Engl 5171 ENGLISH DRAMA TO THE TIME OF SHAKESPEARE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Mystery plays, moralities, interludes, academic and court plays; plays of Kyd, Marlowe, Lyly, Greene, Peele. (Prereq 3241 or 3242. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Winter Qtr, ★Sec 1, Th, 6:20-8:50, LindH 305, Savage

Engl 5172 JACOBAN AND CAROLINE DRAMA. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Selected plays of Jonson, Tourneur, Webster, Middleton, Ford, and others. (Prereq 3241 or 3242. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Spring Qtr, ★Sec 1, W, 6:20-8:50, LindH 305, L Durham

Engl 5174 MODERN DRAMA, 1880-1920. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Beginnings of modern realism, naturalism, and expressionism in English and continental drama. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Winter Qtr, ★Sec 1, M, 6:20-8:50, LindH 215, Hurrell

Engl 5175 MODERN DRAMA SINCE 1920. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368. (IS)

Chief dramatists, English, American, Continental. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Spring Qtr, ★Sec 1, W, 6:20-8:50, LindH 217, Leyasmeyer

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Engl 5221 CHAUCER: THE CANTERBURY TALES. 5 credits, tuition*: Resident \$367.50; Non-resident \$1065.75; Resident Graduate credit \$495; Non-resident Graduate credit \$990; Resident Graduate School credit \$855; Non-resident Graduate School credit \$1710.

Reading *The Canterbury Tales*; introduction to Chaucer's language. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Spring Qtr, ★Sec 1, W, 6:20-9:30, LindH 203, MacLeish

Engl 5471 AMERICAN DRAMA. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

American drama from 1914 to present; representative American plays of the 18th, 19th, and early 20th centuries. Emphasis on plays since 1914. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Fall Qtr, ★Sec 1, W, 6:20-8:50, LindH 229, Geffen

Engl 5651 TECHNIQUES OF POETRY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Poetry analysis. Form and sound: meter, stanza, euphony, free verse. (Prereq grad or Engl major or Δ. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Fall Qtr, ★Sec 1, Th, 6:20-8:50, LindH 302, Wright

Engl 5712 LITERARY CRITICISM: PLATO TO DRYDEN. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Survey, in English translation, of basic texts in Roman and Greek criticism, and representative texts of English neoclassical criticism up to 1700. (Prereq grad or Engl major or Δ. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Winter Qtr, ★Sec 1, T, 6:20-8:50, LindH 217, Weinsheimer

Engl 5811 CELTIC WORLD. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

A survey of the history, folklore, and literature of the six Celtic countries (Brittany, Cornwall, Ireland, Isle of Man, Scotland, and Wales). (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Spring Qtr, ★Sec 1, T, 6:20-8:50, LindH 302, Sproule

Engl 5910 TOPICS IN ENGLISH AND NORTH AMERICAN LITERATURE: AMERICAN POPULAR SONG. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Covers the historical development of the art of writing lyrics for American popular songs during one of its greatest eras—the years between 1915 and 1945 when lyricists and composers such as Cole Porter, Irving Berlin, the Gershwins, Rodgers and Hart, Kern and Hammerstein, Yip Harburg, Johnny Mercer, Dorothy Fields, and others produced songs of wit, sophistication, and poetic grace. Traces the history of the popular music industry known as Tin Pan Alley and the related histories of the Broadway musical theater and Hollywood film musicals, focussing upon a few complete shows such as *Show Boat*, *Lady in the Dark*, *The Wizard of Oz*, or *Kiss Me, Kate*, to show how lyrics are related to character and dramatic context. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Fall Qtr, ★Sec 1, T, 6:20-8:50, LindH 203, Furia

Engl 5910 TOPICS IN ENGLISH AND NORTH AMERICAN LITERATURE: HISTORY OF AMERICAN AND BRITISH CHILDREN'S LITERATURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

American children's literature has roots in the oral tradition and literary works from Great Britain, Germany, and other countries. Course surveys the books against the backdrop of historical and social events. In addition to using an anthology, each student reads a "classic" and writes a paper on a pre-20th-century author, illustrator, or topic. The Kerlan Collection houses facsimiles and editions of most "milestones" in children's literature, while the University libraries provide secondary sources. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to a combined total of 40)

Fall Qtr, ★Sec 2, W, 6:20-8:50, WaLib 109, Hoyle
(See also CSch 0446, Wanda Gag and After: Children's Picture Books)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Engl 5910 TOPICS IN ENGLISH AND NORTH AMERICAN LITERATURE: FOLKLORE IN LESBIAN LITERATURE AND CULTURE. 4

credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

An examination of writings which have been aimed at, adopted by, or produced by lesbians during the past century. By decoding traditional assumptions and expressive behaviors (the folklore) implied or described in the literature, students will develop the ability to understand a "marginal" culture's values and world view. Ways such writings have been read by the "dominant culture" are studied, as is the ability of persons in a "subculture" to read literature produced by the "dominant culture." Richard Bauman's performance theory is used as the theoretical folklore frame. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Winter Qtr, ★Sec 3, W, 6:20-8:50, LindH 305, Stekert

Engl 8240 SHAKESPEARE. 4 credits, tuition*: Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Intensive study of the contents, "interfaces," and assorted corollaries—especially the first—of one or at most two plays (chosen from such possibilities as *Timon*, *The Taming of the Shrew*, *A Midsummer Night's Dream*, *The Merchant of Venice*, *Hamlet*, *Othello*, or *King Lear*). (No prereq. Open only to students admitted to the University of Minnesota Graduate School. A joint Day/Extension class limited to 6 Extension students)

Spring Qtr, ★Sec 1, T, 6:20-8:35, LindH 305, Clayton

Engl 8670 STUDIES IN PROSE FICTION. 4 credits, tuition*: Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Contact the Creative Writing Program for course description: 625-6366, 224 Lind Hall. (Prereq written Δ. Open only to students admitted to the University of Minnesota Graduate School. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★Sec 1, W, 4:15-6:45, LindH 315, Miner

Creative and professional writing (EngW)

(See also The Compleat Scholar noncredit courses in Writing)

The program in Creative Writing is part of the Department of English and is partially supported by funds from the Edelstein-Keller Endowment for Creative Writing. The program offers courses that fulfill requirements for the M.A. degree with an emphasis on creative writing; courses at the undergraduate level are available as well, and advanced undergraduates and other interested students may also apply for admission to the graduate-level courses (see the instructions that appear before the listing of 5000-level courses).

Visiting Writers—Visiting writers funded by the Edelstein-Keller endowment may be in residence for varying periods during the year. You may obtain details of these visits from the program office, 224 Lind Hall; (612) 625-6366.

EngW 1101 INTRODUCTION TO CREATIVE WRITING. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Through a combination of small writers' groups and presentations by visiting writers, this course will help students begin writing memoir, poetry, and fiction. For those who want to try creative writing, improve their reading skills, and learn more about the creative process. This writers' workshop will meet once a week in the evening, but it will be related to presentations given by guest writers in the day school course EngW 1101, and students must be able to attend daytime sessions of that course. (Thursdays, 2:30-3:45) (No prereq. Limited to 25)

Fall Qtr, ★Sec 1, T, 6:20-8:15, AmundH 162

Fall Qtr, ★Sec 2, T, 6:20-8:15, KoltH S133

Fall Qtr, ★Sec 3, W, 6:20-8:15, LindH 315

Spring Qtr, ★Sec 4, T, 6:20-8:15, FordH 115

Spring Qtr, ★Sec 5, W, 6:20-8:15, LindH 325

Spring Qtr, ★Sec 6, W, 6:20-8:15, LindH 340

(See also CSch 0301, Creative Writing I)

EngW 1102 INTRODUCTION TO FICTION WRITING. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Beginning instruction in the art of fiction: characterization, plot, dialogue, and style. Writing exercises to help students generate ideas. Students will read and discuss published fiction as well as their own writing. (Prereq EngW 1101. Limited to 25)

Winter Qtr, ★Sec 1, W, 6:20-8:50, FordH 60

Spring Qtr, ★Sec 2, W, 6:20-8:50, LindH 303

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

EngW 1103 INTRODUCTION TO POETRY WRITING. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Beginning instruction in the art of poetry. Discussion of student poems and contemporary poetry, ideas for generating material, and writing exercises both in and out of class. (Prereq EngW 1101. Limited to 25)

Winter Qtr, ★Sec 1, T, 6:20-8:50, SmithH 231
Spring Qtr, ★Sec 2, Th, 6:20-8:50, FordH 40

EngW 3102 INTERMEDIATE FICTION WRITING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

For students with experience in writing fiction. Exercises, experiments, assigned readings, and discussion of students' work. (Prereq EngW 1102 or equivalent. Limited to 20)

Fall Qtr, ★Sec 1, T, 6:20-8:50, FordH 70

EngW 3103 INTERMEDIATE POETRY WRITING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

A workshop for students with experience in writing poetry. Exercises, experiments, assigned readings, and discussion of students' work. (Prereq 1103 or equivalent. Limited to 20)

Winter Qtr, ★Sec 1, Th, 6:20-8:50, LindH 303

EngW 3110 TOPICS IN CREATIVE WRITING: INTRODUCTION TO PLAYWRITING. 4 credits, §Th 3115, tuition*: Resident \$294; Non-resident \$852.60.

Techniques of playwriting, completion of original one-act play. (Prereq EngW 1101 or equivalent. Meets concurrently with Th 3115, sec 1. Limited to a combined total of 16)

Fall Qtr, ★Sec 1, T, 6:20-8:50, BlegH 120

Courses Requiring Department's Permission

Note—Admission to courses that require permission to register (Δ) can be obtained only from the Creative Writing office. Students interested in these courses must submit an application form, a letter of introduction to the instructor, and (in most cases) a manuscript of about 10 pages, preferably in the genre of the course for which they are applying, to the Creative Writing office, 224 Lind Hall. Applications for fall classes must be submitted by Fri., Aug. 27, 1993; applications for winter classes by Fri., Nov. 12, 1993; and applications for spring classes by Fri., Feb. 18, 1994. Copies of the application form are available in the program office. *If you register without permission from the program office, you will forfeit your place in the class.* If you have questions or would like more information, please call the office at 625-6366. Full course descriptions are available in the Creative Writing office on a quarterly basis.

EngW 5101, 5102 ADVANCED FICTION WRITING. 4 credits each quarter, tuition* each quarter: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Advanced workshop for students with considerable experience in writing fiction. For additional information, contact the Creative Writing office, 625-6366, 224 Lind Hall. (Prereq written Δ. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, 5101, ★○Sec 1, W, 4:15-6:45, LindH 216, Fitzgerald

Winter Qtr, 5102, ★○Sec 1, W, 4:15-6:45, LindH 215, Fitzgerald

EngW 5105, 5106, 5107 ADVANCED POETRY WRITING. 4 credits each quarter, tuition* each quarter: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Advanced workshop for students with considerable experience in writing poetry. The workshop gives students an opportunity to explore new poetic possibilities and to read widely in contemporary poetry and poetics. (Prereq written Δ. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, 5105, ★○Sec 1, T, 4:15-6:45, LindH 216, Browne

Winter Qtr, 5106, ★○Sec 1, W, 4:15-6:45, LindH 340

Spring Qtr, 5107, ★○Sec 1, Th, 4:15-6:45, LindH 215

EngW 5120 TOPICS IN ADVANCED POETRY WRITING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Contact the Creative Writing Program for course descriptions: 625-6366, 224 Lind Hall. (Prereq written Δ. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★○Sec 1, Th, 4:15-6:45, FordH 40

Spring Qtr, ★○Sec 2, W, 4:15-6:45, LindH 320

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

EngW 5204 ADVANCED PLAYWRITING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Advanced playwriting workshop for students with experience in creative writing. Students may wish to take 5310 sec 1 fall quarter. (Prereq written Δ . Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Th 5115. A joint Day/Extension class limited to a combined total of 6 Extension students)

Winter Qtr, ★●Sec 1, W, 4:15-6:45, BlegH 150

EngW 5210 TOPICS IN ADVANCED NON-FICTION WRITING: LITERARY NONFICTION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

A workshop for experienced writers. Readings in literary nonfiction by writers such as Susan Griffin, Roland Barthes, Tom Wolfe, and Eduardo Galeano will help individual students with their creative literary nonfiction projects. Some exercises and short assignments in addition to the longer project. This is *not* a course in "the essay." (Prereq written Δ . Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★●Sec 1, T, 4:15-6:45, LindH 340, Sugnet

EngW 5210 TOPICS IN ADVANCED NON-FICTION WRITING: WRITING FROM LIFE—FINDING A SUBJECT, CREATING A VOICE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

A course to assist students in defining and completing a nonfiction project of their own design in a workshop format, with frequent exercises focusing on specific issues and problems, such as (1) how to focus on a subject, (2) how much to fictionalize, (3) what to do about writing blocks with difficult material, and (4) where to find models. Reading material will be drawn from the work of local writers, some of whom will be asked to discuss their writing process with the class. (Prereq written Δ . Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★●Sec 2, T, 4:15-6:45, LindH 325, Sprengnether

EngW 5310 READING AS WRITERS: CONTEMPORARY DRAMATIC LITERATURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Wide reading of such authors as Sam Shepard, David Mamet, August Wilson, Caryl Churchill, Harold Pinter, Tom Stoppard, Athol Fugard, Peter Handke, Vaclev Havel, and Mbongeni Ngema. Attendance at some local performances will be required. Written responses and imitative exercises assigned. (Prereq written Δ . Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Th 5950. A joint Day/Extension class limited to a combined total of 7 Extension students)

Fall Qtr, ★●Sec 1, W, 4:15-6:45, LindH 340

(See also EngW 5204, Advanced Playwriting, winter quarter)

EngW 5310 READING AS WRITERS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Contact the Creative Writing Program for course description: 625-6366, 224 Lind Hall. (Prereq written Δ . Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★●Sec 2, Th, 4:15-6:45, LindH 340, Fitzgerald

EngW 5320 READING AS WRITERS: POETRY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Contact the Creative Writing Program for course description: 625-6366, 224 Lind Hall. (Prereq written Δ . Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★●Sec 1, T, 4:15-6:45, LindH 340

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

EngW 5401 INTRODUCTION TO PROFESSIONAL EDITING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Beginning editing, from substantive editing to the nature of the editor-writer relationship: manuscript reading, author queries, rewrite and style, some discussion of copy editing. Students develop editing awareness and skills by working on varied writing samples. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 25)

Fall Qtr, ★Sec 1, T, 6:20-8:50, FordH 50

Winter Qtr, ★Sec 2, Th, 6:20-8:50, LindH 217

Spring Qtr, ★Sec 3, W, 6:20-8:50, LindH 315

(See also CSch 0356, Introduction to Copyediting)

EngW 5402 ADVANCED PROFESSIONAL EDITING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Opportunity for students with basic editing competence to advance their skills. Workshop/seminar setting provides experience in editing a long text and exposure to other specific types of editing such as fiction, children's literature, translations, indexing; discussion and guest lectures on areas of book publishing such as libel and contracts, small press; practice in editing one's own writing. (Prereq EngW 5401 and written Δ. Qualified students may register for graduate credit at the University of Minnesota. Limited to 18)

Spring Qtr, ★Sec 1, Th, 6:20-8:50, LindH 216

EngW 8110 WRITING OF FICTION. 4 credits, Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Contact the Creative Writing Program for course descriptions: 625-6366, 224 Lind Hall. (Prereq written Δ. Open only to students admitted to the University of Minnesota Graduate School. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★Sec 1, Th, 4:15-6:45, LindH 325, Fitzgerald

EngW 8110 SEMINAR IN FICTION WRITING: THE NOVEL. 4 credit, tuition*: Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Contact the Creative Writing Program for course description: 625-6366, 224 Lind Hall. *This course is a prerequisite for the spring quarter section of EngW 8110 sec 3 which follows.* (Prereq written Δ. Open only to students admitted to the University of Minnesota Graduate School. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★Sec 2, W, 4:15-6:45, LindH 216, Miner

EngW 8110 SEMINAR IN FICTION WRITING: THE NOVEL. 4 credits, tuition*: Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Contact the Creative Writing Program for course description: 625-6366, 224 Lind Hall. (Prereq 8110 sec 2 and written Δ. Open only to students admitted to the University of Minnesota Graduate School. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★Sec 3, T, 4:15-6:45, LindH 340, Miner

EngW 8120 WRITING OF POETRY: SEMINAR. 4 credits, tuition*: Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Contact the Creative Writing Program for course description: 625-6366, 224 Lind Hall. (Prereq written Δ. Open only to students admitted to the University of Minnesota Graduate School. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★Sec 1, Th, 4:15-6:45, LindH 340

Engl 8670 STUDIES IN PROSE FICTION. Please see listing on page 182.

English as a Second Language (ESL)

(102 Klaeber Court: 624-1503)

College of Liberal Arts

Textbooks for most ESL courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Note: Students registering for ESL courses must contact the Minnesota English Center (MEC) at 624-1053 for testing and placement information. Individuals are required to complete one of the following tests: Minnesota Battery of English Language Proficiency (MNBatt), Test of English as a Foreign Language (TOEFL), or Michigan English Language Assess-

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

ment Battery (MELAB). Arrangements for the MBatt can be made at MEC up to one week prior to enrollment. Information for TOEFL and MELAB is available at MEC, and registration must be completed several weeks prior to enrollment. *When registering for classes, your test score/placement forms must be attached to your registration form.*

ESL 0312 READING AND VOCABULARY SKILLS IN ENGLISH AS A SECOND LANGUAGE. No credit, \$355 (includes \$5 course fee). (IS)

Practice of reading techniques designed to improve comprehension and increase reading speed; opportunities to increase active vocabulary through discussion activities and receptive vocabulary through listening and reading exercises. **Must be taken S-N.** (Prereq a satisfactory score on the MBatt or TOEFL and written permission. Limited to 20)

Spring Qtr, ★Sec 1, TTh, 6:20-8:50, KoltH S139

ESL 0314-0315 FUNDAMENTALS IN ENGLISH AS A SECOND LANGUAGE. No credit, \$355 (includes \$5 course fee).

A low-intermediate course designed to give non-native speakers the basic knowledge and skills needed for daily communication in spoken English; grammatical structures are explained with reference to their uses in social situations; instruction is also provided in pronunciation. **Must be taken S-N.** (Prereq a satisfactory score on MBatt or TOEFL and written permission. Limited to 20)

Fall Qtr, 0314, ★Sec 1, TTh, 6:20-8:50, KoltH S139

Winter Qtr, 0315, ★Sec 1, TTh, 6:20-8:50, KoltH S139

ESL 0324-0325-0326 DEVELOPING FLUENCY IN ENGLISH AS A SECOND LANGUAGE. No credit, \$355 (includes \$5 course fee).

An advanced course for non-native speakers who want to improve their communication skills for social, academic, and professional purposes; emphasis is placed on listening and speaking; content is drawn from the mass media. **Must be taken S-N.** (Prereq a satisfactory score on the MBatt or TOEFL and written permission. Limited to 20)

Fall Qtr, 0324, ★Sec 1, TTh, 6:20-8:50, KoltH S140

Winter Qtr, 0325, ★Sec 1, TTh, 6:20-8:50, KoltH S140

Spring Qtr, 0326, ★Sec 1, TTh, 6:20-8:50, KoltH S137

ESL 0343 ADVANCED ACADEMIC WRITING. No credit, \$355 (includes \$5 course fee).

An advanced writing course for graduate students who are non-native speakers of English; introduction to the use of the library system and to types of writing required in graduate school courses; designed to improve skills in developing and organizing ideas, drafting, revising and editing papers, writing essay exams. **Must be taken S-N.** (Prereq a satisfactory score on MBatt or TOEFL and written permission. Limited to 20)

Fall Qtr, ★Sec 1, MW, 4:20-6:50, KoltH S138

Spring Qtr, ★Sec 2, MW, 4:20-6:50, KoltH S140

ESL 0351 INTERNATIONAL BUSINESS ENGLISH. No credit, \$355 (includes \$5 course fee).

Focuses on English as it is used in business. Students work on reading, listening, speaking, and writing activities based on business topics. **Must be taken S-N.** (Prereq a satisfactory score on MBatt or TOEFL and written permission. Limited to 20)

Fall Qtr, ★Sec 1, MW, 6:20-8:50, KoltH S140

ESL 0352 ENGLISH FOR SCIENCE AND TECHNOLOGY. No credit, \$355 (includes \$5 course fee).

Focuses on English as it is used in scientific fields, emphasizing the language involved in formulating hypotheses, describing experiments, and presenting results. Includes reading, writing, listening, and speaking activities based on scientific and technical English. **Must be taken S-N.** (Prereq a satisfactory score on MBatt or TOEFL and written permission. Limited to 20)

Winter Qtr, ★Sec 1, MW, 6:20-8:50, KoltH S140

Entomology (Ent)

(219 Hodson Hall: 624-3636)

College of Agriculture

Textbooks for most Ent courses are available at Books Underground on the St. Paul campus (624-9200).

Catherine C. Reed, Visiting Resident Associate

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Entomology. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Ent 5920 SPECIAL LECTURES: USING INSECTS IN THE CLASSROOM. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Insect-related activities for the elementary classroom; insect ecology, classification and structure; use of insects in teaching and learning science skills; techniques for observing and maintaining insects in schools; and integration of insect activities with other subjects. (Prereq 1 course in general biology. Qualified students may register for graduate credit at the University of Minnesota. Limited to 24)

Spring Qtr, ★Sec 1, T, 4:30-6:30, HodsonH 480, StP Campus, Reed

Family Practice and Community Health (FPCH)

(6-240 Phillips-Wangensteen: 624-2622)

Medical School

Textbooks for most FPCH courses are available at the Health Sciences Bookstore (625-8600).

Edmond (Eli) Coleman, Associate Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Family Practice and Community Health. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

FPCH 5950 CLINICAL ISSUES IN HUMAN SEXUALITY. 3 credits, tuition*: Resident \$384; Non-resident \$1113.60; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

An examination of clinical issues, assessment techniques, and treatment techniques to common sexual problems. (Prereq enrollment in Health Science grad program in Counseling and Student Personnel Psychology, Psychology, Public Health, Social Work, Family Social Science, or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ØSec 1, T, 4:15-6, FMC Bldg, 1300 S 2nd St, Suite 180, Mpls, Coleman

For information about other courses in human sexuality, call the Program in Human Sexuality, 625-1500.

Family Social Science (FSoS)

(290 McNeal Hall: 625-1900)

College of Human Ecology

Textbooks for most FSoS courses are available at Books Underground (624-9200).

(See also Anth 5920, Topics in Anthropology: Anthropology of AIDS; PubH 5010, Public Health Approach to AIDS; College of Human Ecology; General College; and The Compleat and Practical Scholar noncredit courses)

Linda Budd, Adjunct Assistant Professor in Family Social Science

Philip L. Colgan, Director, Alcohol and Drug Counseling Education Program

Daniel Detzner, Associate Professor

Constance Fabunmi, Instructor, Alcohol and Drug Counseling Education Program

William J. Goodman, Adjunct Assistant Professor, Family Social Science

Harold Grotevant, Professor and Head of Family Social Science

Susan Hoffman, Teaching Specialist, Alcohol and Drug Counseling Education Program

Winifred Lilly-Taylor, Teaching Specialist, Alcohol and Drug Counseling Education Program

Pearl Rosenberg, Professor Emeritus, Medical School

See the Alcohol and Drug Counseling Program, page 189.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Family Social Science. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

International Internships and Study Abroad—Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the MSID office in 106 Nicholson Hall for more information.

Summer Study Abroad—Students will make a comparison of families in different cultures in a study abroad course available through the Global Campus. For information: call the Global Campus at 625-3379.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

FSoS 1001 INTRODUCTION TO FAMILY RELATIONSHIPS. 4 credits, tuition* plus \$1 special fee. Total: Resident \$281; Non-resident \$813.

General exploration of partner selection, interaction in committed relationships, parenting, gender roles, and the impact of social issues on family relationships. (No prereq. A joint Day/Extension)

Fall Qtr, ●Sec 1, M, 5:30-8:50, AkerH 225

Fall Qtr, ●Sec 2, T, 5:30-8:50, McNH 198, StP Campus

Winter Qtr, ●Sec 3, M, 5:30-8:50, AkerH 225

Winter Qtr, ●Sec 4, T, 5:30-8:50, McNH 33, StP Campus

Spring Qtr, ●Sec 5, M, 5:30-8:50, AkerH 225

Spring Qtr, ●Sec 6, T, 5:30-8:50, McNH 33, StP Campus

FSoS 1025 PARENTHOOD. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Differing concepts of family roles—father, mother, son, daughter, sister, brother. Parent-child and sibling interaction. Effects of parenthood on husband-wife relations. (No prereq)

Fall Qtr, Sec 1, W, 5:30-8:50, McNH 197, StP Campus

Spring Qtr, Sec 2, W, 5:30-8:50, AkerH 225

(See also PSch 0861, Parenting: The Active Alert Child)

FSoS 3260 FAMILY RESOURCE MANAGEMENT. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Examination of managerial behaviors in families, including valuing, goal setting, problem solving and decision making, planning and implementation, as well as resource use and creation. (Prereq AgEc 1101, Psy 1001, Soc 1001; Anth 1002 and Pol 1001 recommended. A joint Day/Extension class)

Winter Qtr, ●Sec 1, W, 5:30-8:50, McNH 197, StP Campus

FSoS 5001 HUMAN SEXUAL BEHAVIOR. 5 credits, tuition*: Resident \$412.50; Non-resident \$1196.25; Resident Graduate credit \$495; Non-resident Graduate credit \$990; Resident Graduate School credit \$855; Non-resident Graduate School credit \$1710. (IS)

Multidisciplinary approach to sexual development through individual/family life cycles, emphasizing scientific knowledge to promote sexual health through individual, family, and community services; ethics and values issues. (Prereq 90 cr, 3600 or grad student in social or behavioral or educational or health science or human service program or #. Qualified students may register for graduate credit at the University of

Minnesota. Meets concurrently with HSU 5027. A joint Day/Extension class limited to a combined total of 75)

Fall Qtr, ★●Sec 1, Th, 5:30-9:40, McNH 33, StP Campus

Winter Qtr, ★●Sec 2, Th, 5:30-9:40, MoosT 2-530 (See also CSch 0251, Understanding Human Sexual Behavior)

FSoS 5025 PARENTING. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

This course examines a number of parenting models while concurrently focusing on the child's development from infancy through adolescence. Students are trained to identify differing parenting techniques and to develop their own parenting approach. (Prereq 5200 or 5202, CPsy 1301. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 30 Extension students)

Winter Qtr, ★●Sec 1, M, 4:30-7:50, McNH 197, StP Campus, Budd

FSoS 5200 FAMILY SYSTEMS. 5 credits, tuition*: Resident \$412.50; Non-resident \$1196.25; Resident Graduate credit \$495; Non-resident Graduate credit \$990; Resident Graduate School credit \$855; Non-resident Graduate School credit \$1710. (IS)

Advanced survey of current developments in Family Social Science emphasizing families as complex systems of interpersonal relationships that also interact with larger social systems. (Prereq Psy 1001 or equivalent, Soc 1001 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, T, 5:30-9:40, McNH 33, StP Campus

FSoS 5251 AGING FAMILIES. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Aging families as complex developing systems interacting with changing social structure. Marital relationships, role changes, and family care-giving issues. (Prereq 5200 or SW 5024 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ●Sec 1, M, 5:30-8:40, McNH 197, StP Campus, Detzner

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

FSoS 5500 RACIAL AND ETHNIC DIVERSITY IN FAMILIES. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368. (IS)

Overview of family issues of various American racial and ethnic populations. Combines a study of research and case studies with individual projects to develop and enrich understanding of cultural diversity. (Prereq 5200. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, **Sec 1, T, 4:05-7:30, McNH 197, StP Campus**

Alcohol and drug counseling education program (ADCEP)

(388 McNeal Hall: 625-3778)

Textbooks for most ADCEP courses are available at Books Underground on the St. Paul campus (624-9200).

Your attention is also called to the Alcohol and Drug Counseling Education Certificate, page 484.

To obtain a formal application for the certificate program, write to the Alcohol and Drug Counseling Education Program, University of Minnesota, Family Social Science, 388 McNeal Hall, 1985 Buford Ave., St. Paul, MN 55108. Or call the program office at (612) 625-3778.

For admission to the certificate program, a personal screening interview is required. In this instance, a nonrefundable \$25 screening interview fee will be assessed prior to the start of the interview process. A final evaluation is conducted for all certificate candidates upon completion of all program requirements. A nonrefundable \$25 final evaluation fee is required at the time of the final evaluation session.

Call 625-3778 for room assignments if room is not listed below.

Tuition definitions of Resident and Non-resident are explained on page 22.

You must attend the entire first class session or your space in that class will be forfeited.

FSoS 3026 ASSESSMENT OF ALCOHOL AND DRUG USE PROBLEMS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Series of lectures and discussions with emphasis on theoretical views of the nature of dependency and drug use problems and approaches to diagnosis and/or assessment. **Students working toward the certificate must take this course A-F.** (No prereq. Students interested in graduate credit should see FSoS 5026. Meets concurrently with 5026)

Fall Qtr, Sec 1, T, 6:15-9:15, BorH 335, StP Campus

(See also REX 0324, Alcohol and Degenerative Diseases)

FSoS 3027 CURRENT ISSUES AND PHARMACOLOGY OF ALCOHOL AND DRUG ABUSE. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Series of lectures with emphasis on the historical and cultural perspectives of drug use and abuse. Additional topics: men's, women's, adolescents', minority, and sexuality issues. Fundamental principles of pharmacology as apply to the various classifications of mood altering chemicals. (No prereq. **Students working toward the certificate must take this course A-F.** Students interested in graduate credit should see FSoS 5027. Meets concurrently with 5027)

Winter Qtr, Sec 1, T, 6:15-9:15, McNH 197, StP Campus

FSoS 3028 TREATMENT OF ALCOHOL AND DRUG USE PROBLEMS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Continuum of treatment responses and treatment planning for substance abusers. Topics covered include prevention, self-help groups, professional ethics, nutrition, alternative treatments, aftercare programming, evaluation, and some pragmatics of counseling. (No prereq. **Students working toward the certificate must take this course A-F.** Students interested in graduate credit should see FSoS 5028. Meets concurrently with 5028)

Spring Qtr, Sec 1, T, 6:15-9:15, BorH 335, StP Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

FSoS 3029 COUNSELING SKILLS PRACTICUM I. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Utilizes dyadic role-playing and group exercises to increase competency in the area of basic counseling skills. Topics include assessment of counselor needs and motivations, non-verbal communication, accurate empathy, self-disclosure, and questioning. Video tape will assist students in feedback. (No prereq. **Students working toward the certificate must take this course A-F.** Students interested in graduate credit should see FSoS 5029. Meets concurrently with FSoS 5029. Limited to a combined total of 20)

Fall Spec Term, ★Sec 1, W, 6-9, Sept. 29-Nov. 17, McNH 144, StP Campus, and Sa, 9 a.m.-5, Oct. 9, McNH 144, StP Campus, Hoffman

Fall Spec Term, ★Sec 2, W, 6-9, Sept. 29-Nov. 17, McNH 144, StP Campus, and Sa, 9 a.m.-5, Oct. 9, McNH 144, StP Campus

Winter Spec Term, ★Sec 3, W, 6-9, Jan. 5-Feb. 23, McNH 144, StP Campus, and Sa, 9 a.m.-5, Jan. 15, McNH 144, StP Campus

Spring Spec Term, ★Sec 4, W, 6-9, Mar. 30-May 18, McNH 144, StP Campus, and Sa, 9 a.m.-5, Apr. 9, McNH 144, StP Campus

FSoS 3030 COUNSELING SKILLS PRACTICUM II. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Students to facilitate client's exploration of self and understanding of the problem, and assist in setting therapeutic goals. Topics covered include concreteness, advanced empathy, immediacy, confrontation, reframing, and problem solving. Use of video tape assists students in feedback. (Prereq 3029. **Students working toward the certificate must take this course A-F.** Students interested in graduate credit should see FSoS 5030. Meets concurrently with FSoS 5030. Limited to a combined total of 20)

Fall Spec Term, ★Sec 1, M, 6-9, Sept. 27-Nov. 15, McNH 144, StP Campus, and Sa, 9 a.m.-5, Oct. 2, McNH 144, StP Campus. *No late fee through Sept. 20*

Winter Spec Term, ★Sec 2, M, 6-9, Jan. 3-Feb. 28 (no meeting Jan. 17), McNH 144, StP Campus, and Sa, 9 a.m.-5, Jan. 8, McNH 144, StP Campus, Fabunmi

Spring Spec Term, ★Sec 3, M, 6-9, Mar. 28-May 16, McNH 144, StP Campus, and Sa, 9 a.m.-5, Apr. 2, McNH 144, StP Campus, Fabunmi

FSoS 3031 COUNSELING SKILLS PRACTICUM III. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Designed to provide students with exposure to advanced therapeutic methods. Topics include double bind theory, use of paradox, working with resistant clients, neurolinguistic programming and self-care. (Prereq 3030 or #. **Students working toward the certificate must take this course A-F.** Students interested in graduate credit should see FSoS 5031. Meets concurrently with FSoS 5031. Limited to a combined total of 20)

Fall Spec Term, ★Sec 1, W, 6-10, Oct. 13-Nov. 17 (no meeting Oct. 27, Nov. 3) McNH 198, StP Campus, Colgan, and Sa, 9 a.m.-5, Oct. 30, Nov. 6, McNH 198, StP Campus

Spring Spec Term, ★Sec 2, W, 6-10, Apr. 6-May 11 (No meeting Apr. 20, 27), McNH 198, StP Campus, Colgan, and Sa, 9 a.m.-5, Apr. 23, 30, McNH 198, StP Campus

FSoS 3032 CHEMICAL ABUSE AND FAMILIES: AN OVERVIEW. 4 credits, tuition*: Resident \$330; Non-resident \$957.

An introduction to marriage and family counseling with particular application to the families in which alcohol or drug abuse is a problem. Topics include family types, family of origin, structural family therapy, family systems theory, and alcoholism. Review of literature. **Students working toward the certificate must take this course A-F.** (No prereq. Students interested in graduate credit should see FSoS 5032. Meets concurrently with FSoS 5032. Limited to a combined total of 40)

Fall Spec Term, ★Sec 1, Th, 6-9:30, Sept. 30-Nov. 11, McNH 274, StP Campus, and Sa, 9 a.m.-5, Oct. 23, McNH 274, StP Campus, Lilly-Taylor, Colgan. *No late fee through Sept. 1*

Spring Spec Term, ★Sec 2, Th, 6-9:30, Apr. 7-May 26, (no meeting May 12), McNH 198, StP Campus, and Sa, 9 a.m.-5, May 7, McNH 198, StP Campus, Colgan. *No late fee through Mar. 31*

FSoS 3034 TOPICS IN ALCOHOL AND DRUG ABUSE. 1-5 credits, tuition* each credit: Resident \$82.50; Non-resident \$239.25.

Selected readings and/or projects in alcohol and drug use and problems and evaluation of students' mastery of the assigned study. (Prereq written #. Requests for permission to register must be made to the Alcohol and Drug Counseling Education Program, Family Social Science, University of Minnesota, 388 McNeal Hall, 1985 Buford Ave., St. Paul, MN 55108)

Fall Qtr, Sec 1, Arr., Colgan, Fabunmi, Goodman
Winter Qtr, Sec 2, Arr., Colgan, Fabunmi, Goodman

Spring Qtr, Sec 3, Arr., Colgan, Fabunmi, Goodman

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

FSoS 3035 CLINICAL INTERNSHIP IN CHEMICAL USE PROBLEMS. 2-18 credits, tuition* plus \$25 special fee for each placement. Each credit: Resident \$82.50; Non-resident \$239.25.

A 1000-hour rotating clinical internship designed to strengthen student competencies. Students are placed in 3 to 4 different community agencies/treatment centers. A separate registration is required for each placement. *Also required is a closed class permission slip which is available by calling the program office, 625-3778. Must be taken S-N.* (Prereq 3026, 3027, 3028, 3030, 3032, 3037 and written #. Students interested in graduate credit should see FSoS 5035, sec 1, 2, 3)

Fall Qtr, Sec 1, Arr., Fabunmi
Winter Qtr, Sec 2, Arr., Fabunmi
Spring Qtr, Sec 3, Arr., Fabunmi

FSoS 3037 GROUP THERAPY: THEORY AND PRACTICE. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75.

Lecture, and small group experience aimed at providing an introduction to group therapy concepts. Topics include stages of group development, stages of affective development, Hill Interaction Matrix, leadership roles and functions, Yalom's curative factors, and understanding group process. **Students working toward the certificate must take this course A-F.** (No prereq. Students interested in graduate credit should see FSoS 5037. Meets concurrently with 5037. Limited to a combined total of 20)

Fall Spec Term, ★Sec 1, ThFSa, 9 a.m.-5, Nov. 18-20, CofH 101, StP Campus, Colgan, Goodman.
No late fee through Nov. 11

Winter Spec Term, ★Sec 2, ThFSa, 9 a.m.-5, Feb. 17-19, McNH 274, StP Campus, Colgan. *No late fee through Feb. 10*

Spring Spec Term, ★Sec 3, ThFSa, 9 a.m.-5, May 12-14, McNH 274, StP Campus, Colgan. *No late fee through May 5*

FSoS 5008 INTROSPECTIVE WORKSHOP, ETHICS, AND CLINICAL SUPERVISION. 1 or 2 credits, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Special topics, ethical issues, nonregular program or course in Family Social Science for pre-service or in-service helping professionals. **Must be taken S-N.** (Prereq 3035. Qualified students may register for graduate credit at the University of Minnesota. Limited to 10)

Fall Qtr, ★Sec 1, Arr., Fabunmi
Winter Qtr, ★Sec 2, Arr., Fabunmi
Spring Qtr, ★Sec 3, Arr., Fabunmi

FSoS 5026 ASSESSMENT OF ALCOHOL AND DRUG USE PROBLEMS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for FSoS 3026. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3026)

Fall Qtr, Sec 1, T, 6:15-9:15, BorH 335, StP Campus

FSoS 5027 CURRENT ISSUES AND PHARMACOLOGY OF ALCOHOL AND DRUG ABUSE. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for FSoS 3027. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3027)

Winter Qtr, Sec 1, T, 6:15-9:15, McNH 197, StP Campus

FSoS 5028 TREATMENT OF ALCOHOL AND DRUG USE PROBLEMS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for FSoS 3028. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3028)

Spring Qtr, Sec 1, T, 6:15-9:15, BorH 335, StP Campus

FSoS 5029 COUNSELING SKILLS PRACTICUM I. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for FSoS 3029. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3029. Limited to a combined total of 20)

Fall Spec Term, ★Sec 1, W, 6-9, Sept. 29-Nov. 17, McNH 144, StP Campus, and Sa, 9 a.m.-5, Oct. 9, McNH 144, StP Campus, Hoffman

Fall Spec Term, ★Sec 2, W, 6-9, Sept. 29-Nov. 17, McNH 144, StP Campus, and Sa, 9 a.m.-5, Oct. 9, McNH 144, StP Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Winter Spec Term, ★Sec 3, W, 6-9, Jan. 5-Feb. 23, McNH 144, StP Campus, and Sa, 9 a.m.-5, Jan. 15, McNH 144, StP Campus

Spring Spec Term, ★Sec 4, W, 6-9, Mar. 30-May 18, McNH 144, StP Campus, and Sa, 9 a.m.-5, Apr. 9, McNH 144, StP Campus

FSoS 5030 COUNSELING SKILLS PRACTICUM II. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for FSoS 3030. (Prereq 5029. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3030. Limited to a combined total of 20)

Fall Spec Term, ★Sec 1, M, 6-9, Sept. 27-Nov. 15, McNH 144, StP Campus, and Sa, 9 a.m.-5, Oct. 2, McNH 144, StP Campus. Fabunmi. *No late fee through Sept. 20*

Winter Spec Term, ★Sec 2, M, 6-9, Jan. 3-Feb. 28 (no meeting Jan. 17), McNH 144, StP Campus, and Sa, 9 a.m.-5, Jan. 8, McNH 144, StP Campus, Fabunmi

Spring Spec Term, ★Sec 3, M, 6-9, Mar. 28-May 16, McNH 144, StP Campus, and Sa, 9 a.m.-5, Apr. 2, McNH 144, StP Campus, Fabunmi

FSoS 5031 COUNSELING SKILLS PRACTICUM III. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See description for FSoS 3031. (Prereq 5030. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3031. Limited to a combined total of 20)

Fall Spec Term, ★Sec 1, W, 6-10, Oct. 13-Nov. 17 (no meeting Oct. 27, Nov. 3) McNH 198, StP Campus, Colgan, and Sa, 9 a.m.-5, Oct. 30, Nov. 6, McNH 198, StP Campus

Spring Spec Term, ★Sec 2, W, 6-10, Apr. 6-May 11 (No meeting Apr. 20, 27), McNH 198, StP Campus, Colgan, and Sa, 9 a.m.-5, Apr. 23, 30, McNH 198, StP Campus

FSoS 5032 CHEMICAL ABUSE AND FAMILIES: AN OVERVIEW. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for FSoS 3032. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3032. Limited to a combined total of 40)

Fall Spec Term, ★Sec 1, Th, 6-9:30, Sept. 30-Nov. 11, McNH 274, StP Campus, and Sa, 9 a.m.-5, Oct. 23, McNH 274, StP Campus, Lilly-Taylor, Colgan. *No late fee through Sept. 1*

Spring Spec Term, ★Sec 2, Th, 6-9:30, Apr. 7-May 26, (no meeting May 12), McNH 198, StP Campus, and Sa, 9 a.m.-5, May 7, McNH 198, StP Campus, Colgan. *No late fee through Mar. 31*

FSoS 5034 TOPICS IN ALCOHOL AND DRUG ABUSE. 2-5 credits, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Selected readings and/or projects in alcohol and drug use problems and evaluation of students' mastery of the assigned study. (Prereq written #. Requests for permission to register must be made to the Alcohol and Drug Counseling Education Program, Family Social Science, 388 McNeal Hall, 1985 Buford Ave., St. Paul, MN 55108. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, Arr., Colgan, Fabunmi, Goodman
Winter Qtr, Sec 2, Arr., Colgan, Fabunmi, Goodman

Spring Qtr, Sec 3, Arr., Colgan, Fabunmi, Goodman

FSoS 5035 CLINICAL INTERNSHIP IN CHEMICAL USE PROBLEMS. 2-18 credits, tuition* plus \$25 special fee (placement fee). Each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$98.50; Non-resident Graduate credit \$197; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

See course description for FSoS 3035. A separate registration is required prior to the start of each individual internship placement. *Also required is a closed class permission slip which is available by calling the program office, 625-3778. Must be taken S-N.* (Prereq 3026, 3027, 3028, 3030, 3032, 3037, and written #. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, Arr., Fabunmi

Winter Qtr, Sec 2, Arr., Fabunmi

Spring Qtr, Sec 3, Arr., Fabunmi

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

FSoS 5037 GROUP THERAPY: THEORY AND PRACTICE. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

See course description for FSoS 3037. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3037. Limited to a combined total of 20)

Fall Spec Term, ★Sec 1, ThFSa, 9 a.m.-5, Nov. 18-20, CofH 101, StP Campus, Colgan, Goodman.

No late fee through Nov. 11

Winter Spec Term, ★Sec 2, ThFSa, 9 a.m.-5, Feb. 17-19, McNH 274, StP Campus, Colgan. No late fee through Feb. 10

Spring Spec Term, ★Sec 3, ThFSa, 9 a.m.-5, May 12-14, McNH 274, StP Campus, Colgan. *No late fee through May 5*

Please call the Alcohol and Drug Counseling Education Program office for further information at (612) 625-3778.

For information on noncredit conferences or workshops in Family Social Science, please contact the Department of Conferences and Institutes, 107 Armoury (625-3020).

For information on off-campus credit courses in Home Economics areas, please call or write College of Human Ecology, University of Minnesota, St. Paul, Minnesota 55108 (624-3635).

Finance (BFin)

(735 Management/Economics: 624-2888)

Carlson School of Management

Textbooks for most BFin courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also General College; and The Practical Scholar noncredit courses)

Scott Haniford, Teaching Assistant
Jaeuk Khil, Teaching Assistant
Gahng Sohk Koh, Teaching Assistant
Evelyn Murphy, Adjunct Assistant Professor
Seongho Park, Teaching Assistant
John Reik, Adjunct Assistant Professor
David Runkle, Adjunct Assistant Professor
Greg Swinehart, Teaching Assistant

Your attention is called to the Credit and Financial Management Certificate program. See the Degrees and Certificates section of this Bulletin.

Carlson School of Management degree students must take degree Finance courses A-F.

Note: Students taking Carlson School of Management upper division undergraduate courses through

CEE are expected to have completed the equivalent of 90 quarter college credits with a minimum of a "B-" grade average.

BFin 3000 FINANCE FUNDAMENTALS. 4 credits, tuition*(includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

Provides students with a comprehensive, analytical introduction to the principal concepts in Finance. After considering the general business environment, the course examines valuation theory. Then financial management decisions concerning uses and sources of funds are presented, thus introducing students to capital budgeting. The course concludes by surveying the nation's financial markets. **May not be taken S-N.** (Prereq Acct 1025 or 1050 and at least 90 credits completed or in progress. Limited to 60)

Fall Qtr, ★Sec 1, M, 5:30-8:30, AndH 370, Park

Fall Qtr, ★Sec 2, Th, 5:30-8:30, AndH 370, Khil

Winter Qtr, ★Sec 3, T, 5:30-8:30, BlegH 10, Koh

Winter Qtr, ★Sec 4, Th, 5:30-8:30, AndH 370,

Swinehart

Spring Qtr, ★Sec 5, T, 5:30-8:30, AndH 350, Khil

Spring Qtr, ★Sec 6, W, 5:30-8:30, BlegH 155,

Haniford

BFin 3100 FINANCIAL MANAGEMENT. 4 credits, tuition*(includes \$16 special fee): Resident \$346; Non-resident \$973.

A broad case-oriented course building on concepts introduced in 3000. The viewpoint of a corporation's principal financial officer is generally used. Case discussions, augmented by lectures and readings, enable students to apply finance principles in actual business situations. Experience in problem definition, specification of alternatives, analysis, and decisions. Effective verbal and written communication stressed. *Rigorous analysis of the assigned case material prior to each class is expected as preparation for active student participation.* (Prereq 3000 and at least 90 credits completed or in progress. Limited to 60)

Winter Qtr, ★Sec 1, W, 6:10-9:10, BlegH 235,

Park

BFin 3300 INVESTMENT MANAGEMENT AND FINANCIAL MARKETS. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Introduces decision procedures in a variety of financial markets. The banking system and other financial intermediaries, risk-return relationships of various marketable securities, analytical techniques of portfolio management in the context of the nation's changing financial markets. (Prereq 3000 and at least 90 credits completed or in progress. Limited to 50)

Fall Qtr, ★Sec 1, W, 5:30-8, BlegH 135, Reik

Spring Qtr, ★Sec 2, Th, 5:30-8, BlegH 105, Reik

(See also PSch 0909, Investment Analysis and Portfolio Building)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

BFin 3601 BANK FINANCIAL MANAGEMENT. 4 credits, tuition*(includes \$16 special fee): Resident \$346; Non-resident \$973.

Comprehensive introduction to the principles of bank financial management. Bank risk analysis, lending, investments, liquidity, asset-liability management. Lecture augmented with case discussions. (Prereq 3000 and at least 90 credits completed or in progress. Acct 1050 recommended. A joint Day/Extension class limited to 17 Extension students)

Fall Qtr, ★○Sec 1, Th, 5:30-8, HHH Ctr 60,
Runkle

BFin 3602 REGULATION OF DEPOSITORY INSTITUTIONS. 4 credits, tuition*(includes \$16 special fee): Resident \$346; Non-resident \$973.

Overview of federal regulation of commercial banks and thrift institutions. Rationale for and history of regulation, current regulatory structure and environment, principles guiding future evolution. Heavy emphasis on student involvement through discussions and group presentations. (Prereq 3000. A joint Day/Extension class limited to 17 Extension students)

Winter Qtr, ★○Sec 1, T, 5:30-8, BlegH 155,
Murphy

BFin 3603 SELECTED PROBLEMS IN BANKING MANAGEMENT. 4 credits, tuition*(includes \$16 special fee): Resident \$346; Non-resident \$973.

Close-up view of bank management issues through lectures by guest speakers drawn from the banking community. Bank strategic planning, lending issues, innovative financial instruments, bank risk management, new bank powers. (Prereq 3000. A joint Day/Extension class limited to 17 Extension students)

Spring Qtr, ★○Sec 1, T, 5:30-8, BlegH 350,
Murphy

Certified Financial Planner (CFP)

The University of Minnesota no longer offers CFP courses.

Finnish

(See Scandinavian Languages)

Fisheries and Wildlife (FW)

(200 Hodson Hall: 624-3600)

College of Natural Resources

Textbooks for most FW courses are available at Books Underground on the St. Paul campus (624-9200).

(See also The Compleat Scholar noncredit courses in Natural and Physical Sciences, page 402)

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in Fisheries and Wildlife. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

No Extension courses offered 1993-94.

Food Science and Nutrition (FScN)

(225 Food Science and Nutrition: 624-1290)

Colleges of Agriculture and Human Ecology

Textbooks for FScN courses on the Minneapolis campus are available at the Health Sciences Bookstore in MoosT 2-554 (625-8600); books for courses on the St. Paul campus are available at Books Underground on the St. Paul campus (624-9200).

Paul B. Addis, Professor

Elaine H. Asp, Associate Professor

Linda J. Brady, Associate Professor of Nutrition

William M. Breene, Professor of Food Science and Technology

Francis F. Busta, Professor; Department Head

Mary E. Darling, Assistant Professor and Extension Nutritionist

Eugenia A. Davis, Professor of Food Chemistry

Daniel D. Gallaher, Assistant Professor of Nutrition

Madge N. Hanson, Assistant Professor in Clinical Nutrition

Mindy S. Kurzer, Assistant Professor of Nutrition

Gary A. Reineccius, Professor of Food Chemistry

Theodore P. Labuza, Professor of Food Science

Mary C. McFadden, Health Nutrition Administration

Benjamin H. Senauer, Professor of Agricultural and Applied Economics

David E. Smith, Associate Professor of Dairy and Food Technology

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in FScN. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

FScN 1612 PRINCIPLES OF NUTRITION. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Fundamental concepts: Human nutritional requirements, function of nutrients, nature of deficiencies. Vegetarianism, weight loss, fad diets, activity, obesity, cancer, heart disease, food processing, safety, world food problems. (Prereq high school chemistry and biology. Lectures meet concurrently each quarter. Fall sections are joint Day/Extension and limited to 10 Extension students each. Spring sections are Extension only and limited to 30 each)

Fall Qtr, ★●Sec 1, Lect TTh, 4:15-5:30, SmithH 100; Rec T, 3:10-4, Arch 60, Kurzer

Fall Qtr, ★●Sec 2, Lect TTh, 4:15-5:30, SmithH 100; Rec M, 5:45-6:35, Arch 45, Kurzer

Fall Qtr, ★●Sec 3, Lect TTh, 4:15-5:30, SmithH 100; Rec T, 5:45-6:35, Arch 30, Kurzer

Fall Qtr, ★●Sec 4, Lect TTh, 4:15-5:30, SmithH 100; Rec T, 5:45-6:35, Arch 45, Kurzer

Fall Qtr, ★●Sec 5, Lect TTh, 4:15-5:30, SmithH 100; Rec W, 5:45-6:35, Arch 30, Kurzer

Fall Qtr, ★●Sec 6, Lect TTh, 4:15-5:30, SmithH 100; Rec W, 5:45-6:35, Arch 45, Kurzer

Fall Qtr, ★●Sec 7, Lect TTh, 4:15-5:30, SmithH 100; Rec Th, 3:10-4, Arch 30, Kurzer

Fall Qtr, ★●Sec 8, Lect TTh, 4:15-5:30, SmithH 100; Rec Th, 3:10-4, Arch 60, Kurzer

Fall Qtr, ★●Sec 9, Lect TTh, 4:15-5:30, SmithH 100; Rec Th, 5:45-6:35, Arch 30, Kurzer

Fall Qtr, ★●Sec 10, Lect, TTh, 4:15-5:30, SmithH 100; Rec Th, 5:45-6:35, Arch 45, Kurzer

Spring Qtr, ★Sec 11, Lect T, 6-8:30, SmithH 100; Rec T, 4:55-5:45, Arch 30, Hanson

Spring Qtr, ★Sec 12, Lect T, 6-8:30, SmithH 100; Rec T, 4:55-5:45, Arch 45, Hanson

Spring Qtr, ★Sec 13, Lect T, 6-8:30, SmithH 100; Rec T, 8:45-9:35, Arch 30, Hanson

Spring Qtr, ★Sec 14, Lect T, 6-8:30, SmithH 100; Rec T, 8:45-9:35, Arch 45, Hanson

Spring Qtr, ★Sec 15, Lect T, 6-8:30, SmithH 100; Rec Th, 4-4:50, Arch 30, Hanson

Spring Qtr, ★Sec 16, Lect T, 6-8:30, SmithH 100; Rec Th, 4-4:50, Arch 45, Hanson

Spring Qtr, ★Sec 17, Lect T, 6-8:30, SmithH 100; Rec Th, 6-6:50, Arch 30, Hanson

Spring Qtr, ★Sec 18, Lect T, 6-8:30, SmithH 100; Rec Th, 6-6:50, Arch 45, Hanson

(See also PSch 0936, Nutrition, Health, and Disease: Facts and Fantasies; and REX 0301, Nutrition and Oral Health of the Elderly)

FScN 3610 (replaces 3622) COMMUNITY NUTRITION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75.

Introduction to the goals of community food and nutrition programs including national, international, public, and private programs; an overview of cultural food patterns; and the management of (assessing needs, planning, implementing, and evaluating) food and nutrition programs for groups of people. (Prereq 1612 or equivalent, 5 cr Anth, Psy, or Soc. A joint Day/Extension class)

Spring Qtr, ●Sec 1, MW, 4:05-5:25, ABLMS 125. StP Campus, Darling

FScN 5111 INDEPENDENT STUDY IN FOOD SCIENCE AND NUTRITION. 1-5 credits, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Individual laboratory or library research in an area related to food science and nutrition. (Prereq Δ. Call 624-6753 for more information. May be repeated for credit. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Time arr.

Winter Qtr, ●Sec 2, Time arr.

Spring Qtr, ●Sec 3, Time arr.

FScN 5390 INTRODUCTION TO FOOD LAW.

4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Analysis of federal and state legal requirements and case law history affecting production, processing, packaging, marketing, and distribution of food and food products. (Prereq 1102 or #. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, Th, 5:30-9, FScN 23, StP Campus, Labuza

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

FScN 5474 FOOD MARKETING ECONOMICS. 4 credits, §AgEc 5550, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Economics of food marketing in U.S. Covers food consumption trends; consumer food behavior; food expenditure and consumption data; consumer survey methodology; the food distribution and retailing system; food policy issues related to food marketing. Students pursue individual and group projects. (Prereq AgEc 3101 or #. Meets concurrently with AgEc 5550. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, TTh, 4:30-6:10, McNH 144, StP Campus, Asp, Senauer

FScN 5524 SENSORY EVALUATION OF DAIRY PRODUCTS. 1 credit, tuition* plus \$10 course fee. Total: Resident \$92.50; Non-resident \$249.25; Resident Graduate credit \$109; Non-resident Graduate credit \$208; Resident Graduate School credit \$181; Non-resident Graduate School credit \$352.

Laboratory and commercial procedures for evaluating sensory properties and market quality of dairy products. Causes and identification of common defects in flavor, physical properties, and appearance. (Prereq 3102. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, W, 5:30-7:30, FScN 150, StP Campus, Smith

FScN 5622 MACRONUTRIENT METABOLISM. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Physiological function and metabolic fate of carbohydrates, lipids and proteins, and their involvement in fulfilling energy needs for maintenance, growth, and work. (Prereq 3612, Biol 5001, Phsl 3051. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, MW, 5-6:40, MechE 102, L Brady

FScN 5623 VITAMIN AND MINERAL METABOLISM. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Nutritional, biochemical and physiological function of essential vitamins and minerals in humans and experimental animal models. (Prereq 3612, Biol 5001, Phsl 3051. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, MW, 5-6:40, MechE 102, Gallaher

FScN 5624 HUMAN PROTEIN AND ENERGY UTILIZATION. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Regulation of human protein and energy utilization, interactions, adaptations: critical evaluations of methods of determining requirements, technical and ethical problems in human experimentation and determination of recommended levels of intake. (Prereq 5622. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ●Sec 1, MW, 5-6:40, MechE 102, Kurzer

FScN 5643 WORLD FOOD PROBLEMS. 3 credits, §AgEc 5790, §Agro 5200, §CAPS 5280, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

A multidisciplinary approach to social, economic, and technical problems of feeding the world's growing population. Principles sought from social and economic sciences and plant, animal, and food sciences for their application to world food problems. (Prereq sr or grad student with #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with AgEc 5790, LACS 5280, and Agro 5200. A joint Day/Extension class)

Fall Qtr, ●Sec 1, W, 6-9, ClaOff B35, StP Campus, Breene, Busta

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

FScN 5665 APPLIED CLINICAL NUTRITION

I. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Nutritional assessment and support; fluid and electrolyte balance; diet drug interactions. Nutritional intervention in disorders of the gastrointestinal system and in cancer. (Prereq Biol 5001 or ¶5001; Phsl 3051 or 1002; LaMP 5177 or ¶5177. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Th, 4-6:30, ABLMS 125, StP Campus, Hanson

FScN 5666 APPLIED CLINICAL NUTRITION

II. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Continuation of 5665. Pathology, treatment, and nutritional therapy of diseases of the cardiovascular and respiratory systems and common disorders of the endocrine system, notably diabetes mellitus; nutrition intervention in obesity. (Prereq 5665; 5662 or ¶5662; or demonstrated equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, Th, 4-6:30, ABLMS 125, StP Campus, Hanson

FScN 5667 APPLIED CLINICAL NUTRITION

III. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Continuation of 5666. Pathology, treatment, and diet therapy in diseases of kidney and urinary tract. Therapeutic management of selected central nervous system disorders, inborn errors of metabolism, and allergies. Special nutritional considerations in care of pediatric patients with common pathological disorders. (Prereq 5665, 5666; or demonstrated equivalency. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ●Sec 1, Th, 4-6:30, ABLMS 125, StP Campus, Hanson

FScN 8311 FLAVOR CHEMISTRY. 3 credits, tuition*: Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Chemistry of food flavor including biogenesis of flavor, production during processing, deterioration during storage, potentiation, duplication as an art and science, and use in food industry. (Prereq 5312 or #. Open only to students admitted to the University of Minnesota Graduate School. A joint Day/Extension class)

Fall Qtr, ●Sec 1, M, 6:15-9:15, FScN 23, StP Campus, Reineccius

FScN 8315 FOOD PROTEINS. 3 credits, tuition*: Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Principles of isolating, handling, and processing proteins from conventional and new protein sources. Relationship of structural, functional, and interactive properties of proteins to developing and/or maintaining the nutritional and aesthetic properties of the products they comprise. (Prereq 55110, 5312 or #. Open only to students admitted to the University of Minnesota Graduate School. A joint Day/Extension class)

Spring Qtr, ●Sec 1, W, 4:05-6; F, 4:05-4:55, FScN 255, StP Campus, Davis

Foreign Studies SPAN (FSSP)

(646 Social Sciences: 624-4525)

College of Liberal Arts

Textbooks are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Classical and Near Eastern Studies)

(For information about SPAN—Student Project for Amity Among Nations—see page 343)

For information about other study abroad opportunities, see the Global Campus section of this bulletin, page 466.

Theofanis Stavrou, Professor of History, Modern Greek Studies

Soterios Stavrou, Lecturer, Modern Greek Studies

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

FSSP 3001-3002-3003 LANGUAGE, CULTURE AND SOCIETY: MODERN GREEK. 5 credits each quarter, \$MdGk 1101-1102-1103, tuition* each quarter: Resident \$367.50; Non-resident \$1065.75

A concentrated study of the fundamentals—reading, writing and conversation of Modern Greek. The emphasis is on the language as a key to understanding culture and society in Greece. The course is usually offered for SPANners going to Greece, but it is open to others. (No prereq for 3001; 3001 or equiv for 3002; 3002 or equiv for 3003. Meets concurrently with MdGk 1101-1102-1103)

Fall Qtr, 3001, Sec 1, Th, 6:20-8:50, BlegH 245,
T Stavrou

Winter Qtr, 3002, Sec 2, Th, 6:20-8:50, BlegH 245,
T Stavrou

Spring Qtr, 3003, Sec 3, Th, 6:20-8:50, BlegH 245,
T Stavrou

FSSP 3004-3005-3006 LANGUAGE, CULTURE AND SOCIETY: INTERMEDIATE MODERN GREEK. 5 credits each quarter, \$MdGk 1104-1105-1106, tuition* each quarter: Resident \$367.50; Non-resident \$1065.75

A review of the fundamentals of syntax through a variety of readings from Modern Greek prose writers and poets. Provides additional grammatical elements which are reinforced through reading, conversation, and composition. Offered for SPANners returning from study in Greece or those with the equivalent of one year of Modern Greek. (Prereq 3003 or equiv for 3004; 3004 or equiv for 3005; 3005 or equiv for 3006. Meets concurrently with MdGk 1104-1105-1106)

Fall Qtr, 3004, Sec 1, M, 6:20-8:50, SocSci 101,
S Stavrou

Winter Qtr, 3005, Sec 2, M, 6:20-8:50, SocSci 101,
S Stavrou

Spring Qtr, 3006, Sec 3, M, 6:20-8:50, SocSci 101,
S Stavrou

Forest Products (ForP)

(203 Kaufert Laboratory: 624-9219)

College of Natural Resources

Textbooks for most ForP courses are available at Books Underground on the St. Paul campus (624-9200).

Robert W. Erickson, Professor
R. O. Gertjensan, Professor
R. T. Seavey, Resident Associate

Joint Day/Extension Classes—You may register through Extension for most day school classes sched-

uled before 4 p.m. in Forest Products. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

ForP 5405 PAPER IN TODAY'S WORLD. 3 credits, \$5305, tuition* (includes \$15 course fee): Resident \$262.50; Non-resident \$732.75; Resident Graduate credit \$312; Non-resident Graduate credit \$609; Resident Graduate School credit \$528; Non-resident Graduate School credit \$1041.

Intended primarily for elementary and secondary school teachers although other interested students may enroll. Successful completion of the course will enable a teacher to prepare a teaching unit on pulp and paper for use in an elementary, junior high, or senior high school science class. The course consists of lectures, laboratories, and demonstrations on pulp and paper manufacture, properties and characteristics of paper, uses for paper, specialty papers, and recycling of paper. The Kaufert Laboratory is completely equipped with pulp and paper equipment, including a pilot plant paper machine. Course requirements include two laboratory reports and a final examination. For graduate credit, an additional report is required. **Not open to Forest Products majors.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 15)

Winter Spec Term, ★Sec 1, Fri., Jan. 28, 1994, 6-9;
Sat., Jan. 29, 1994, 9 a.m.-4:30; Sun., Jan. 30,
1994, 9 a.m.-4:30; Mon., Jan. 31, 1994, 6-9;
Kaufert Laboratory, room 125, StP Campus,
Gertjensan, Erickson. *Registration closes Jan.
7, 1994. No late fee through Jan. 8*

Winter Spec Term, ★Sec 2, Fri., Feb. 4, 1994, 6-9;
Sat., Feb. 5, 1994, 9 a.m.-4:30; Sun., Feb. 6,
1994, 9 a.m.-4:30; Mon., Feb. 7, 1994, 6-9;
Kaufert Laboratory, room 125, StP Campus,
Gertjensan, Erickson. *Registration closes Jan.
14, 1994. No late fee through Jan. 15*

ForP 5410 UNDERSTANDING WOOD. 2 credits, \$5305, tuition*: Resident \$165; Non-resident \$478.50.

For the woodworking professional and the serious craftsman. This course provides in-depth instruction about the cellular structure of wood, the identification of hardwoods and softwoods, and about the interaction of water and wood. No prior technical training in wood properties is needed, although general experience with woodworking is helpful. **Not open to Forest Products majors.** (No prereq. May not be taken for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, Th, 6:30-8:30, KaufL 125, StP
Campus, Seavey

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Forest Resources (FR)

(110 Green Hall: 624-3400)

College of Natural Resources

Textbooks for most FR courses are available at Books Underground on the St. Paul campus (624-9200).

(See also The Compleat Scholar noncredit courses in Natural and Physical Sciences, page 402)

Alan R. Ek, Professor

Roger T. Johnson, Associate Professor of Elementary Education

Carl E. Vogt, Instructor

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in Forest Resources. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

FR 5403 FUNDAMENTALS OF NATURAL RESOURCE EDUCATION. 3 credits, tuition* (includes \$5 course fee); Resident \$252.50; Non-resident \$722.75; Resident Graduate credit \$302; Non-resident Graduate credit \$599; Resident Graduate School credit \$518; Non-resident Graduate School credit \$1031.

Intended for elementary school teachers. Focuses on an understanding of the forest community, the tools used by the forester, and an awareness of effective forest management practices. Forestry-related indoor and outdoor activities which can be translated for classroom use will be featured. Major forestry and natural resource issues are discussed. Development of outdoor teaching skills in an urban forest environment are emphasized. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Fall Spec Term, ★Sec 1, Fri., Oct. 1, 1993, 6:30-10; Sat., Oct. 2, 1993, 8:30 a.m.-5; Sun., Oct. 3, 1993, 9 a.m.-4; Tues., Nov. 30, 1993, 6:30-10. Wood Lake Nature Center, Richfield (66th and Lakeshore Drive), Johnson, Vogt. *No late fee through Sept. 24*

Spring Spec Term, ★Sec 2, Fri., Apr. 8, 1994, 6:30-10; Sat., Apr. 9, 1994, 8:30 a.m.-5; Sun., Apr. 10, 1994, 9 a.m.-4; Tues., June 1, 1994, 6:30-10. Wood Lake Nature Center, Richfield (66th and Lakeshore Drive), Johnson, Vogt. *No late fee through Apr. 1*

Study Abroad and Internships—Forest Resources courses and internships may be arranged in the Minnesota Studies in International Development (MSID) program in Ecuador, Morocco, India, Jamaica, Kenya, or Senegal. Call 626-2234 or stop by the MSID office in 106 Nicholson Hall for more information.

French (Fren)

(260 Folwell Hall: 624-4308)

French and Italian

College of Liberal Arts

Textbooks for most Fren courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See History; Humanities; and PSch 0982, French for Travelers)

F.R.P. Akehurst, Professor

Betsy Barnes, Associate Professor

Tom Conley, Professor

Peter Robinson, Associate Professor

Eileen Sivert, Associate Professor

Joseph Waldauer, Professor

Molly Wieland, Professor

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in French and Italian. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Those CLA students who have already studied French are required to take a proficiency exam before enrolling. Contact the Department of French and Italian for details on testing dates (624-4308).

Beginning French, Fren 1101-1102-1103 and *Intermediate French*, 1104-1105, stress pronunciation, aural comprehension, basic grammatical forms, patterns of French, and the ability to recombine them in new situations. Reading and writing skills will be developed as a complement to the acquisition of the spoken objectives. In 1106, verbal skills are developed through oral and written analysis of cultural readings and films.

Read about language laboratories on page 51.

Fren 1101-1102-1103 BEGINNING FRENCH. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015. (IS)

Basic listening, speaking, reading and writing skills. Stress on communicative competence. Some cultural readings. (No prereq for 1101; 1101 or 1 year high school French or # for 1102; 1102 or 2 years high school French or # for 1103. Limited to 25)

Fall Qtr, 1101, ★Sec 1, MTh, 6:20-8:25, KoltH S137

Fall Qtr, 1101, ★Sec 2, MTh, 6:20-8:25, FolH 208

Fall Qtr, 1101, ★Sec 3, MTh, 6:20-8:25, AmundH 156

Fall Qtr, 1101, ★Sec 4, MTh, 6:20-8:25, KoltH S133

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Winter Qtr, 1102, ★Sec 1, MTh, 6:20-8:25, FolH 214

Winter Qtr, 1102, ★Sec 2, MTh, 6:20-8:25, KoltH S137

Winter Qtr, 1102, ★Sec 3, MTh, 6:20-8:25, KoltH S135, S136 (Limit 50)

Spring Qtr, 1103, ★Sec 1, MTh, 6:20-8:25, KoltH S136

Spring Qtr, 1103, ★Sec 2, MTh, 6:20-8:25, KoltH S134, S135 (Limit 50)

Fren 1104 INTERMEDIATE FRENCH. 5 credits, tuition*: Resident \$350; Non-resident \$1015. Discussion of literary and cultural readings. Grammar review and development of writing skills. (Prereq 1103 or #. Limited to 25)

Fall Qtr, ★Sec 1, MTh, 6:20-8:25, KoltH S132

Fall Qtr, ★Sec 2, MTh, 6:20-8:25, FolH 234

Fren 1105 INTERMEDIATE FRENCH. 5 credits, tuition*: Resident \$350; Non-resident \$1015. Cultural and literary readings, progressively less structured discussion leading to free expression of ideas through speaking and writing. (Prereq 1104 or #. Limited to 25)

Winter Qtr, ★Sec 1, MTh, 6:20-8:25, FolH 134

Winter Qtr, ★Sec 2, MTh, 6:20-8:25, FordH 70

Fren 1106 INTERMEDIATE FRENCH. 5 credits, tuition*: Resident \$350; Non-resident \$1015. Continued development of all four language skills. Provides an integrated presentation of contemporary French culture to increase student awareness and understanding of cultural differences. (Prereq 1105. Limited to 25)

Fall Qtr, ★Sec 1, MTh, 6:20-8:25, FordH 60

Spring Qtr, ★Sec 2, MTh, 6:20-8:25, AmundH 156

Study Abroad and Internships—Intermediate and advanced French courses, including internships, are offered in several French-speaking countries through the Global Campus. For information: call the Global Campus at 625-3379.

Fren 3014 FRENCH PHONETICS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Theoretical description and practical application of French phonetics, with emphasis on improvement of pronunciation. (Prereq 1106. Limited to 18)

Spring Qtr, ★Sec 1, TTh, 6:10-7:40, FolH 148, Wieland

Fren 3015 FRENCH CONVERSATION AND COMPOSITION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Emphasis on writing, development of communication skills, based on a consolidation of grammar. (Prereq 1106. Limited to 18)

Fall Qtr, ★Sec 1, T, 6:10-9:40, FolH 148

Fren 3016 ADVANCED FRENCH COMPOSITION AND CONVERSATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Builds on Fren 3015 with emphasis on aspects of expression and writing. Reading and discussion with attention to different cultural contexts. (Prereq 3015 or #. Limited to 18)

Winter Qtr, ★Sec 1, T, 6:10-9:40, FolH 246

Fren 3017 STYLISTICS THROUGH TRANSLATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Organized around various perspectives: the arts, economics, ecology, politics, sociology. (Prereq 3016 or superior achievement in 3015 or #. Limited to 18)

Spring Qtr, Sec 1, W, 6:20-9:30, FolH 312

Fren 3020 BUSINESS FRENCH. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Intended to increase active command of the language, in particular the specialized vocabulary used in French business and industry. Recommended for students planning to use the language in a French milieu. (Prereq 3015. Limited to 18)

Spring Qtr, ★Sec 1, W, 6:10-9:15, FolH 138

Fren 3602 FRENCH LITERATURE IN ENGLISH TRANSLATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Representative works from 19th and 20th centuries, movements, genres, themes. Knowledge of French helpful but not necessary. (No prereq. Limited to 50)

Spring Qtr, ★Sec 1, W, 6:20-9:15, FolH 134

FrIt 3604 CINEMAS OF THE REAL.

See French and Italian below.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Reading French

Fren 0001 READING FRENCH. No credit, tuition*: \$280. (IS)

This course is designed solely to impart a basic reading knowledge of the French language; full time is devoted to intensive reading and translation of a variety of texts. Since this approach deals only with the reading aspect of the language, there are no sessions for oral-aural drills and composition, and great skill can be acquired in a short time. At the end of one quarter the student is given a reading examination in French. Students successfully completing the course should obtain the Language Certification form from the Graduate School and present it to the department for signature. (No prereq. **Must be taken S-N**)
Fall Qtr, Sec 1, T, 6:20-8:50, FolH 142
Spring Qtr, Sec 2, T, 6:20-8:50, KoltH S134

Fren 0001 is also offered as a Summer Extension Class in first 5-week term.

French and Italian (FrIt)

(260 Folwell Hall: 624-4308)

French and Italian

College of Liberal Arts

Textbooks for most FrIt courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Tom Conley, Professor

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in French and Italian. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

FrIt 3604 CINEMAS OF THE REAL. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Film work of major vanguards: surrealism; Vigo, Renoir, Wells, Visconti, Rossellini, DeSica. Course varies in structure. Knowledge of French and Italian helpful but not necessary. (No prereq)

Winter Qtr, Sec 1, MW, 6:10-8:30, NichH 45,
Conley

General College (GC)

(140 Appleby Hall: 625-6663)

Textbooks for most GC courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

General College Faculty
William Adamson, Associate Professor

Fred M. Amram, Professor

Thomas Brothen, Professor

Terence Collins, Professor

Robert C. delMas, Lecturer

Jill Gidmark, Professor

David Giese, Professor

Jay Hatch, Associate Professor

Dennis Hower, Professor

Murray S. Jensen, Teaching Specialist

Allen Johnson, Associate Professor

Fred Johnson, Associate Professor

Peter Kahn, Assistant Professor

Laura Koch, Assistant Professor

Patrick Kroll, Associate Professor

Sander Latts, Associate Professor

Shari L. Peterson, Assistant Professor

Ivan M. Policoff, Associate Professor

Douglas Robertson, Professor

Mary K. St. John, Associate Professor

William Schwabacher, Professor

Geoffrey Sirc, Associate Professor

Gail Thoen, Assistant Professor

Richard Uthe, Associate Professor

Kimerly J. Wilcox, Assistant Professor

Candido Zanon, Professor

General College Adjunct Faculty

Jeff Millikan, Lecturer

Duane Nelson, Lecturer

Justin O'Connell, Lecturer

Allison Sciplin, Lecturer

GC Mission

The mission of the General College is to enroll, and prepare for admission to University degree programs, students who require special preparation because of personal circumstances or previous education. Thus the General College provides a strong connection to the University community for students seeking to develop their academic potential. It also provides an environment for a diverse population of students, faculty, and staff and seeks to encourage multicultural perspectives in its activities.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in General College. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

General College Categories

Artistic Expression

- 1311 Art: General Arts
- 1366 Women's Literature
- 1371 Literature: Reading Short Stories
- 1374 The Movies: An Introductory Course
- 1485 Creativity: Photography I
- 1816 African-American Literature
- 1836 Asian-American Literature

Business Studies

- 1235 United States: Law in Society
- 1275 Consumer Transactions and Law
- 1454 Statistics
- 1511 Introduction to Business
- 1513 Small Business Operations
- 1534 Practical Law
- 1540 Accounting Fundamentals I
- 1551 Marketing: Introduction
- 1553 Marketing: Principles of Management
- 1571 Introduction to Microcomputer Applications
- 1572 Introduction to Computer Programming
- 1575 Introduction to Computers

Communication Skills

- 0402 Grammar and Usage Review
- 1421 Writing Laboratory: Basic Writing
- 1422 Writing Laboratory: Communicating in Society
- 1456 Functions and Problems of Logic
- 1461 Oral Communication: Speaking and Creative Thinking
- 1464 Oral Communication: Group Process and Discussion

Family Life Studies

- 1721 Marriage, Family, and Personal Fulfillment
- 1733 Contemporary Sex Roles

Mathematical Studies

- 0621 Elementary Algebra
- 0623 Plane Geometry
- 0625 Intermediate Algebra, Part I
- 0631 Intermediate Algebra, Part II
- 0643 Basic Mathematics: Programmed Study
- 1454 Statistics
- 1571 Introduction to Microcomputer Applications
- 1572 Introduction to Computer Programming
- 1575 Introduction to Computers

Natural Science

- 1111 Science in Context: Weather and Climate
- 1112 Ecological Evaluation of Environmental Problems
- 1132 Biological Science: The Human Body
- 1133 Nature Study

- 1162 Physical Science: Stellar Astronomy
- 1163 Physical Science: Principles of Physics
- 1166 Physical Science: Principles of Chemistry

Psychology

- 1281 Psychology in Modern Society
- 1283 Psychology of Human Development
- 1284 Behavior Problems of Children

Social Issues

- 1211 People and Problems
- 1233 United States: Government and Politics
- 1252 World Politics
- 1285 Cultural Anthropology

General College Course Descriptions

(Listed in numerical order)

Continuing Education for Women (CEW) section available in the following course: GC 1551

Composition Courses

Attendance: Students absent from the first day of classes in any 0xxx-level composition course may lose their place unless they contact their instructor prior to the first class meeting.

Textbooks: Because different instructors require different texts, even for different sections of the same course, students should attend class before buying books for composition courses.

(See also Composition and Communication; The Compleat and Practical Scholar noncredit courses; and Rhetoric)

GC 0402 (formerly Comp 0002C) GRAMMAR AND USAGE REVIEW. No credit, tuition*: \$350 (IS)

An intensive step-by-step review of grammar (parts of speech, inflections, syntax), punctuation, and spelling for those who want a "refresher" before going into other composition courses or who feel the need of a basic course in the fundamentals of English usage; designed to develop the ability to compose correct and effective sentences. (No prereq. Limited to 24)

Fall Qtr, ★Sec 1, T, 5:30-8:30, ApH 223,
O'Connell

Preparatory Mathematics Program

Choosing the first mathematics class in college is difficult but very important. Students want to minimize the number of preparatory mathematics classes that they must take while at the same time maximizing their opportunity for success. Our experience indicates that students choose an inappropriate advanced class more often than they choose a more elementary class. Be careful in your choice because your success in a mathematics class will depend, at least in part, on whether or not you have the appropriate background for the class.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

It is to your advantage to take a placement test (see below) before registering for a mathematics course. Even if you have recently completed a math course, you should still take a test to see what you know and understand today. Like other languages, mathematics is hierarchical: calculus assumes that you know algebra, and algebra assumes that you know arithmetic. If you have not worked with mathematics for some time, you may be surprised to find out how much you have forgotten. Also, you may be surprised to find that the level of sophistication of a "precalculus" course at the University is quite a bit higher than a "precalculus" course in high school. The names may be the same, but the level of complexity and abstraction may be quite different.

In general, students with substantial knowledge in algebra (including factoring, radicals, and complex numbers) should be able to register for GC 0631, Intermediate Algebra, Part II, while students with some background in elementary algebra (including signed numbers, polynomials, and equations) will want to try GC 0625, Intermediate Algebra, Part I. Students with good background in fractions, decimals, and percents should register for GC 0621, Elementary Algebra, while students who lack background in arithmetic should try GC 0643. GC 0643 is also the appropriate beginning course for anyone who has a fear of mathematics or needs to proceed at a pace different from that of other students. With the aid of an instructor, students in GC 0643 are able to progress through arithmetic or introductory algebra at a pace more suited to his or her learning style.

GC/CEE Mathematics Placement Testing

Placement tests may be taken prior to registration in GC mathematics courses and are highly recommended for those students who are uncertain about which mathematics course would be best for them to start with. The GC/CEE mathematics placement examination may be taken through the General College Mathematics Learning and Assessment Center (MLAC), 9 Appleby Hall.

Testing schedule (appointments are not needed in advance to take tests): Prior to fall quarter, the test will be given at 6 p.m. on the following dates: *Monday, August 9; Tuesday, August 17; Tuesday, September 7; and Monday, September 13.* Placement tests also may be taken during regular MLAC hours during summer terms, and during noon hours (11 a.m. to 1 p.m.) September 7 to 17, 1993.

Test scores and enrollment recommendations will be provided as soon as possible—frequently on the same day as tests are taken.

For winter and spring quarter placement testing schedules, contact the GC math center at (612) 625-3468.

After the term begins, the Mathematics Learning and Assessment Center provides tutorial assistance, and placement testing in mathematics for those unable to attend the above scheduled sessions. These services are available to students registered in any of the General College preparatory mathematics courses.

(See also math courses in The Practical Scholar non-credit section)

GC 0621 ELEMENTARY ALGEBRA. No credit, tuition*: \$350 (IS)

For students with strong arithmetic background. Topics include signed numbers, variables, expressions, equations, inequalities, exponents, polynomials, factoring, rational expressions, Cartesian graphing, systems of equations, radicals, and word problems. (Prereq GC math level C or GC 0611 or GC 1434. Limited to 30)

Fall Qtr, ★Sec 1, MW, 6-8:15, NichH 201

Winter Qtr, ★Sec 2, MW, 6-8:15, NichH 201

Spring Qtr, ★Sec 3, MW, 6-8:15, NichH 201

GC 0623 PLANE GEOMETRY. No credit, tuition*: \$350

Elements of plane geometry with some geometry of solids equivalent to 1 year of high school plane geometry with adequate time given to each idea. (Prereq one year of high school algebra or GC 0621. Entrance requirement for College of Liberal Arts and Institute of Technology. Meets concurrently with GC 0643. Limited to 15)

Fall Qtr, ★Sec 1, W, 5-8, ApH 9

Winter Qtr, ★Sec 2, W, 5-8, ApH 9

Spring Qtr, ★Sec 3, W, 5-8, ApH 9

GC 0625 INTERMEDIATE ALGEBRA, Part I. No credit, \$1445, tuition*: \$350 (IS)

For students with adequate background in elementary algebra. Sets, real numbers, linear equations, linear inequalities, absolute value equations and inequalities, exponents, polynomials, systems of equations, word problems, rational expressions, roots and radicals, complex numbers. (Prereq GC math level D or GC 0621 with grade of C or better or GC 1435. Limited to 30)

Fall Qtr, ★Sec 1, MW, 6-8:15, NichH 207

Winter Qtr, ★Sec 2, MW, 6-8:15, NichH 207

Spring Qtr, ★Sec 3, MW, 6-8:15, NichH 209A

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

GC 0631 INTERMEDIATE ALGEBRA, Part II. No credit, \$1446, tuition*: \$350 (IS)

Basic knowledge of linear and quadratic equations and inequalities, exponents, factoring, rational expressions, roots, radicals, complex numbers, and graphing assumed. Topics include quadratic equations, matrix solutions to systems of equations, general inequalities, conic sections, functions, logarithmic and exponential functions. Introduction to sequences, series, and binomial theorem. (Prereq GC math level E or GC 0625 or 1445. Limited to 40)

Fall Qtr, ★Sec 1, MW, 6-8:15, NichH 216

Winter Qtr, ★Sec 2, MW, 6-8:15, NichH 216

Spring Qtr, ★Sec 3, MW, 6-8:15, NichH 216

GC 0643 BASIC MATHEMATICS: PROGRAMMED STUDY. No credit, tuition*: \$280.

With aid of instructor, topics selected from following: whole numbers, fractions, decimals, percents, signed numbers, formulas, simple graphs, ratio and proportion, sets, properties, equations, inequalities, rectangular graphs, polynomials, factoring, rational expressions, radicals. Offered through Mathematics Learning and Assessment Center. (No prereq. Meets concurrently with GC 0623. Limited to 15)

Fall Qtr, ★Sec 1, W, 5-8 plus 1 hr arr, ApH 9

Winter Qtr, ★Sec 2, W, 5-8 plus 1 hr arr, ApH 9

Spring Qtr, ★Sec 3, W, 5-8 plus 1 hr arr, ApH 9

GC 1111 SCIENCE IN CONTEXT: WEATHER AND CLIMATE. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Day-to-day and long-range weather patterns in terms of interactions among atmosphere, oceans, land surfaces, and earth motions. Storms, seasonal change, climatic change, fair weather, air pollution, and distribution of moisture and energy considered from theoretical as well as applied standpoints. Basic principles of science applied to analyzing and forecasting weather, interpreting climates and climatic change, and realizing the great extent to which individuals interact with the atmospheric environment. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, W, 5:30-8:30, Roseville Area HS 244, A Johnson

GC 1112 ECOLOGICAL EVALUATION OF ENVIRONMENTAL PROBLEMS. 4 credits, \$1113, tuition*: Resident \$280; Non-resident \$812.

Concepts of ecology (organization of ecosystems, material cycling, energy flow and production, population dynamics, and community interactions) needed to understand proximate and ultimate causes of environmental problems such as world hunger, endan-

gered species, deforestation, solid and hazardous wastes, global climate change, acid rain, and cultural eutrophication. Frameworks and methodologies for critically evaluating impacts and proposing interventions. (No prereq. Limited to 35)

Winter Qtr, ★Sec 1, Th, 5:30-8:30, ApH 303, Hatch

(See also EEB 3001, Introduction to Ecology; Interdepartmental Study; and PSch 0501, Ecology and Conservation of Tropical Rain Forests)

GC 1132 BIOLOGICAL SCIENCE: THE HUMAN BODY. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Problems of physical, mental, and social health are related to anatomy, physiology, and needs of the human organism. In studying the heart, for example, instructor shows what it is, how it works, its importance to overall functioning of the body, what can go wrong with it, and what is known about keeping it on the job. Films, televised dissections, and demonstrations supplement lectures. (No prereq. Limited to 35)

Fall Qtr, ★Sec 1, MW, 5-7:15, ApH 303, Jensen

Winter Qtr, ★Sec 2, MW, 5-7:15, ApH 303,

Wilcox

(See also Biology; and GC 1134, Cardiovascular Anatomy and Physiology)

GC 1133 NATURE STUDY. 4 credits, tuition* (includes \$20 course fee): Resident \$300; Non-resident \$832.

General natural history for students with little or no prior training in biology. Common Minnesota plants and animals examined in the field from the viewpoint of the informed amateur naturalist. Natural habitat associations; field observation and identification techniques. (No prereq. Limited to 20)

Spring Qtr, ★Sec 1, W, 6-9, ApH 311, Hatch

GC 1162 PHYSICAL SCIENCE: STELLAR ASTRONOMY. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Introductory study of large-scale structure of universe. Definition and measurement of certain properties of stars: magnitude, distance, temperature, size. Spectral classification of stars, nebulae, pulsars, black holes, galaxies, quasars; theories of relativity, cosmology, cosmogony. Opportunity to observe through University telescope. Four one-hour evening laboratories or independent study project arranged. (No prereq. Limited to 35)

Winter Qtr, ★Sec 1, M, 6-9, Phys 131, Policoff

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

GC 1163 PHYSICAL SCIENCE: PRINCIPLES OF PHYSICS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Basic physical principles; aspects of mechanics, electricity, magnetism, sound. Lectures, discussion, lecture experiments, demonstrations; no separate laboratory. Problem-solving geared to students' varying mathematical backgrounds; individual outside help available. (Prereq elementary algebra or 0621 or GC math level D. Limited to 35)

Spring Qtr, ★Sec 1, M, 6-9, Phys 131, Policoff

(See also CSch 0560, Quarks to Quasars: An Overview of 20th-Century Physics)

GC 1166 PHYSICAL SCIENCE: PRINCIPLES OF CHEMISTRY. 5 credits, tuition*: Resident \$350; Non-resident \$1015. (IS)

Fundamental principles and laws of chemistry; theory, development, application, roots in experience. Problem-solving techniques. Topics include classification of matter, elements, atomic and molecular structure, compounds and chemical bonding, chemical reactions and stoichiometry, gas laws. No separate laboratory. (No prereq. Limited to 50)

Fall Qtr, ★Sec 1, TTh, 6-9, SciCB 125, Uthe

GC 1211 PEOPLE AND PROBLEMS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Interdisciplinary, cross-cultural study of major political and economic problems of human society. Problems such as unemployment, inflation, energy, pollution, war, and distribution of power examined from social sciences perspective. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, T, 6-9, ApH 103, Thoen

GC 1233 UNITED STATES: GOVERNMENT AND POLITICS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Major institutions of American national government and politics examined in context of their recent social-historical development. Becoming a well-informed and active citizen is encouraged through participant-observer field assignment and required reading of daily newspaper. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, W, 5:30-8:30, ApH 103

GC 1235 UNITED STATES: LAW IN SOCIETY. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

The role of law in our changing society; legal aspects of current topics. Topics include: court and court systems, corrections, police-community relations, environmental problems, domestic problems, wills and probate, and insurance. When possible on individual or group basis, students visit conciliation,

municipal, or district courts, prisons, workhouses, jails, juvenile detention centers, or similar institutions. (No prereq. Limited to 24)

Fall Qtr, ★Sec 1, M, 5-8, ApH 127, Hower

GC 1252 WORLD POLITICS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Comprehensive theoretical introduction to contemporary international relations, post-World War II international politics, and role of United States in the world. Political development of selected countries in Latin America, Middle East, East Asia, Eastern Europe, and former Soviet Union. In addition to course texts, the *New York Times* will help integrate coursework with actual events. (No prereq. Limited to 30)(No prereq. Limited to 30)

Spring Qtr, ★Sec 1, W, 5:30-8:30, ApH 103

GC 1275 CONSUMER TRANSACTIONS AND LAW. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Students investigate the relationship between the consumer marketplace and the law. Focus is on preventive law for the consumer seller-buyer at the pre-agreement, agreement, and post-agreement stages of consumer transactions. Legal self-sufficiency as a cost-saving, effective consumer technique is stressed in an applied skills perspective. Topics covered include a general introduction to consumer law; deceptive practices and legal regulation of marketing techniques; extending credit; usury regulation; product warranty issues; security agreement regulation; debtor default and creditor collection remedies; buyer/seller remedies for contractual non-performance; product liability for defective goods; and debt counseling and bankruptcy concerns. (No prereq. Limited to 24)

Winter Qtr, ★Sec 1, T, 5:30-8:30, ApH 223, Kahn

GC 1281 PSYCHOLOGY IN MODERN SOCIETY. 5 credits, tuition* (includes \$10 course fee); Resident \$360; Non-resident \$1025.

Introduction to science of human behavior. Topics include analysis of research methods used in observing and drawing conclusions about behavior, development of behavior, human biological and social motives, place of emotion and conflict in human adjustment, how the individual perceives the environment and learns from it, and psychology of behavior in groups. Course fee covers classroom computer use. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, M, 6-8:50 (plus 1 hr arr), ApH 128, Brothen

Winter Qtr, ★Sec 2, M, 6-8:50 (plus 1 hr arr), ApH 128, Brothen

Spring Qtr, ★Sec 3, M, 6-8:50 (plus 1 hr arr), ApH 128, Brothen

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

GC 1283 PSYCHOLOGY OF HUMAN DEVELOPMENT. 5 credits, tuition*: Resident \$350; Non-resident \$1015. (IS)

Focuses on growth and development of individual from conception through old age. Physical, motor, social, emotional, and psychological growth, and cognitive development. Integrated view of facets of development in order to understand human being as a complex organism functioning in a complex environment. The family as the main environmental factor in early development of individual. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, Th, 5:30-9, ApH 103, Latts
Winter Qtr, ★Sec 2, Th, 5:30-9, ApH 103, Latts

GC 1284 BEHAVIOR PROBLEMS OF CHILDREN. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Identification of maladaptive behavior/coping with children demonstrating such behavior. Dynamics of behavior seen at home, in schools, and in social relationships. Examines effects of heredity, family experience, peer pressure, and socioeconomic class on development of behavior problems in children. (No prereq. Limited to 30)

Spring Qtr, ★Sec 1, Th, 6-9, ApH 303, Latts

GC 1285 CULTURAL ANTHROPOLOGY. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Human culture viewed as integrated system of learned and shared knowledge that guides behavior of all members of given society. Attempt to develop generalizations about influence of culture on human behavior by analyzing and comparing ways of life in wide range of cultures. Power of culture to shape personality and power of individuals to alter cultures. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, M, 5-8, ApH 103, F Johnson
Spring Qtr, ★Sec 2, T, 5-8, ApH 103, F Johnson

(See also Anthropology)

GC 1311 ART: GENERAL ARTS. 4 credits, §3311, tuition*: Resident \$280; Non-resident \$812. Examines representative works of art from genres of painting, sculpture, architecture, literature, and music to discover how and why art is created and to enable students to formulate and evaluate ideas and attitudes about it. (No prereq. Limited to 35)

Spring Qtr, ★Sec 1, Th, 5-8:30, ApH 302, Adams

(See also The Arts in The Compleat Scholar noncredit section)

GC 1366 LITERATURE: IMAGES OF WOMEN IN LITERATURE. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Images of women (such as submissive wife, sex object, woman alone, and liberated woman) as presented in short fiction, drama, and poetry, and occasionally in advertising, movies, and television. Problems and concerns of women as writers, as expressed in diaries and essays of such writers as Virginia Woolf and Tillie Olson. (No prereq. Limited to 35)

Fall Qtr, ★Sec 1, M, 5:30-8:30, ApH 302, Gidmark

GC 1371 LITERATURE: READING SHORT STORIES. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Representative short stories by American, British, and continental writers. How individual writers have used the form of the short story to express their ideas about human experience. (No prereq. Limited to 35)

Winter Qtr, ★Sec 1, M, 5:30-8:30, ApH 302,
Gidmark

GC 1374 THE MOVIES: AN INTRODUCTORY COURSE. 4 credits, tuition* (includes \$10 course fee): Resident \$290; Non-resident \$822.

Films as art forms and as communication media. Students view films in class, may read film scripts, and may attend film showings locally to learn how to analyze films and to recognize their unique characteristics. (No prereq. Limited to 35)

Fall Qtr, ★Sec 1, T, 5-8:30, ApH 302
Winter Qtr, ★Sec 2, W, 5-8:30, ApH 302,
Adamson

Writing Laboratories

GC 1421 and GC 1422 (with a grade of C+ or better in GC 1422) will satisfy the College of Liberal Arts lower division Writing Practice requirement for General College students. For additional information, call CEE Counseling, 625-2500. Students in other colleges at the University should seek further information in the Composition section of this bulletin.

GC 1421 WRITING LABORATORY: BASIC WRITING. 4 credits, tuition* (includes \$10 course fee): Resident \$290; Non-resident \$822.

Students write on various topics in response to reading and discussion. Personal help with individual writing problems. Emphasis is on clear and effective written expression through extensive writing and revision. Microcomputer instruction; uses IBM PC. (No prereq. Limited to 18)

Fall Qtr, ★Sec 1, M, 5-8, ApH 204, Collins
Winter Qtr, ★Sec 2, M, 5-8, ApH 204
Spring Qtr, ★Sec 3, M, 5-8, ApH 204

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

GC 1422 WRITING LABORATORY: COMMUNICATING IN SOCIETY. 4 credits, §1423, tuition*: Resident \$280; Non-resident \$812.

Primarily through writing, but also through reading and discussion, student analyzes how people communicate in society: how they perceive events, how they think about them, and how they write and talk about them. Extensive writing practice. Microcomputer instruction; uses IBM PC. (Prereq 1421 or #. Limited to 18)

Winter Qtr, ★Sec 1, T, 5-8, ApH 204

Spring Qtr, ★Sec 2, T, 5-8, ApH 204

GC 1454 STATISTICS. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Introduction to modern statistics, emphasizing problem solving and hands-on experience with real data. Topics include data exploration, summary statistics, sampling, probability, distributions, estimation, and hypothesis testing. (Prereq GC math level D or elementary algebra. Limited to 35)

Fall Qtr, ★Sec 1, W, 5-8, ApH 226, Giese

Winter Qtr, ★Sec 2, T, 5-8, ApH 303, delMas

Spring Qtr, ★Sec 3, W, 5-8, ApH 303, Giese

GC 1456 FUNCTIONS AND PROBLEMS OF LOGIC. 4 credits, §1442, tuition*: Resident \$280; Non-resident \$812.

Introduction to logical thinking. Students apply critical analysis and techniques of precise reasoning to various types of discourse and argument, and develop habits of systematic thinking by learning about complexities of language, differences between good and bad evidence, and methods of deductive and inductive reasoning. (No prereq. Limited to 24)

Fall Qtr, ★Sec 1, M, 5:30-8:30, ApH 223, Zanoni

Winter Qtr, ★Sec 2, M, 5:30-8:30, ApH 102,

Zanoni

Spring Qtr, ★Sec 3, M, 5:30-8:30, ApH 303,

Zanoni

GC 1461 ORAL COMMUNICATION: SPEAKING AND CREATIVE THINKING. 4 credits, tuition* (includes \$10 course fee): Resident \$290; Non-resident \$822.

In conversations, discussions, and prepared speeches, students share ideas, attitudes, and experiences with others; examine how language functions as means of communication. Modes and methods of creative thinking are explored in relation to effective oral communication. Students listen and respond to communication of others and comment on what they see, hear, and feel. (No prereq. Limited to 20)

Fall Qtr, ★Sec 1, W, 5-8, ApH 102, Amram

GC 1464 ORAL COMMUNICATION: GROUP PROCESS AND DISCUSSION. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Nature of groups, how they form and function, what purpose they serve in our society, and how leadership and other role behaviors emerge. Diverse group projects and activities. Skills and theory especially adapted for the professional setting. (No prereq. Limited to 20)

Fall Qtr, ★Sec 1, M, 4:30-7:30, ApH 102

Winter Qtr, ★Sec 2, W, 4:30-7:30, ApH 102

Winter Qtr, Sec 3, Th, 4:30-7:30, ApH 102

Spring Qtr, ★Sec 4, M, 4:30-7:30, ApH 102

GC 1485 CREATIVITY: PHOTOGRAPHY I. 4 credits, tuition* (includes \$30 special fee): Resident \$310; Non-resident \$842.

Instruction in use of cameras, basic optics, film and paper emulsions, and similar topics. Work with basic darkroom techniques, film developing, and paper printing. Books available at the bookstore in Williamson Hall (625-6000). Students must have a camera; a 35mm camera is preferred, although not required. (No prereq. Limited to 24)

Fall Qtr, ★Sec 1, W, 6-9:45, MacP 31, Millikan

Winter Qtr, ★Sec 2, W, 6-9:45, MacP 31, Millikan

Spring Qtr, ★Sec 3, W, 6-9:45, MacP 31, Millikan

(See also The Compleat Scholar photography courses, pages 378-381)

GC 1511 INTRODUCTION TO BUSINESS. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Broad overview of business and the economic environment in which businesses operate. Topics include economic systems, ethics, management, marketing, finance, and law. Useful introductory course for students planning further study in business fields; also recommended for those who want to survey field without studying it in detail. (No prereq. Limited to 35)

Fall Qtr, ★Sec 1, T, 5-8, ApH 226, St. John

Winter Qtr, ★Sec 2, T, 5-8, ApH 226, St. John

GC 1513 SMALL BUSINESS OPERATIONS. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Students evaluate opportunities to start a small business or to purchase an existing one. Topics include financing the business; marketing products; administering key resources; organizing, controlling, and writing the business plan. Designed for people who plan to own or operate a small business in a marketing-related area. (No prereq. Limited to 35)

Fall Qtr, ★Sec 1, Th, 6-9, ApH 303, Kroll

Spring Qtr, ★Sec 2, T, 5-8, ApH 226, St. John

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

GC 1534 PRACTICAL LAW. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Practical topics in field of law. Topics include: definition and sources of law, formation and discharge of contracts, torts (personal injury and property damage suits), criminal law, bailments, nature and classification of real and personal property, and joint ownership and tenancy. (No prereq. Limited to 35)

Fall Qtr, ★Sec 1, T, 5:30-8:30, ApH 303, Kahn

Spring Qtr, ★Sec 2, T, 5:30-8:30, ApH 303, Kahn

(See also Business Law; The Practical Scholar non-credit courses; and Soc 3102, Introduction to Criminal Behavior and Social Control)

GC 1540 ACCOUNTING FUNDAMENTALS I. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Designed for those who plan continued study in accounting as well as for those interested in other business fields. Balance sheet and income statement methodology, the accounting cycle for both service and merchandising businesses, and an examination of special journals, inventories, receivables, and accounting for plant and equipment. Both lecture and class discussion; regular homework assignments. Midterm and final examinations. (No prereq. Limited to 35)

Winter Qtr, ★Sec 1, Th, 6-9, ApH 226, Kroll

Spring Qtr, ★Sec 2, Th, 6-9, ApH 223, Kroll (Limit 24)

GC 1551 MARKETING: INTRODUCTION. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Product pricing, distribution, and promotional principles; target market and segmentation analysis; current marketing strategies and trends. (No prereq. Limited to 35)

Fall Qtr, ★Sec 1, M, 5:30-8:30, ApH 226, Peterson

Spring Qtr, ★Sec 2, Th, 1:30-4:30, MacP, Peterson.

Offered through Continuing Education for Women.

GC 1553 MARKETING: PRINCIPLES OF MANAGEMENT. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Principles of management: planning, organizing, directing, controlling. Also covers decision making, leadership, group dynamics, and motivation. (Prereq GC 1551 or #. Limited to 35)

Spring Qtr, ★Sec 1, M, 5:30-8:30, ApH 226, Peterson

GC 1571 INTRODUCTION TO MICROCOMPUTER APPLICATIONS. 5 credits, tuition* (includes \$10 course fee): Resident \$360; Non-resident \$1025. (IS)

Self-paced course covering operating system (DOS), word processing (WordPerfect), spreadsheet (Lotus clone), and data base (dBASE III) applications. Emphasis on using microcomputers in practical ways. Course work may be done on classroom microcomputers or on student's own IBM-compatible microcomputer. (Prereq 0621 or elementary algebra. Meets concurrently with GC 1572. Limited to 18)

Fall Qtr, ★Sec 1, T, 5-9, ApH 319, Robertson

Winter Qtr, ★Sec 2, Th, 5-9, ApH 319, Robertson

Spring Qtr, ★Sec 3, T, 5-9, ApH 319, Robertson

GC 1572 INTRODUCTION TO COMPUTER PROGRAMMING. 5 credits, \$3571, tuition* (includes \$10 course fee): Resident \$360; Non-resident \$1025. (IS)

Self-paced course where students design, write, code, and run BASIC programs. Emphasis on writing structured programs for social sciences. Provides excellent background for further programming courses. Course work may be done on classroom microcomputers or student's own IBM-compatible microcomputer. (Prereq GC 1571 or IBM microcomputer experience. Meets concurrently with GC 1571. Limited to 17)

Fall Qtr, ★Sec 1, T, 5-9, ApH 319, Robertson

Winter Qtr, ★Sec 2, Th, 5-9, ApH 319, Robertson

Spring Qtr, ★Sec 3, T, 5-9, ApH 319, Robertson

GC 1575 (formerly 1535) INTRODUCTION TO COMPUTERS. 4 credits, \$1535, tuition* (includes \$10 course fee): Resident \$290; Non-resident \$822.

Emphasis is placed on developing computer literacy. Topics include historical development, hardware (input/output, memory, central processor), operating systems, data base management, system development, economic and social impact, and applications in various disciplines. Students apply concepts by programming representative problems in BASIC. Some work on computers outside of class is required; terminals are available on campus at moderate charge. (Prereq 0621 or elementary algebra. Limited to 35)

Spring Qtr, ★Sec 1, Th, 6-9, ApH 226

GC 1721 MARRIAGE, FAMILY, AND PERSONAL FULFILLMENT. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Psychological, social, and biological aspects of marriage and family living. Helping students gain understanding of, and self-awareness concerning, such areas as dating, mate selection, getting married, having children, and sexuality. Adjustments outside of traditional marital and family relationships. (No prereq. Limited to 30)

Winter Qtr, ★Sec 1, T, 6-9, ApH 103, Thoen

(See also PSch 0815, Identity and Intimacy in Close Relationships)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

GC 1733 CONTEMPORARY SEX ROLES. 4 credits, tuition*: Resident \$280; Non-resident \$812. Social roles and related expectations, informal and formal roles, role modification, and role reversal. Overcoming sexual stereotyping. Focus on analyzing the openness and rigidity of sex roles in childhood socialization; education; mate selection; marital, parental, and homemaking roles; occupations; and social trends. (No prereq. Limited to 30)
Spring Qtr, ★Sec 1, Th, 6-9, ApH 103, Thoen

(See also PSch 0814, Defining a Self: Gender Issues in Adult Development)

GC 1816 AFRICAN-AMERICAN LITERATURE. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Students read and evaluate poetry, drama, folklore, short stories, and an African-American novel; through literature, students assess artists' own perceptions and interpretations of outlook, feelings, and psychological makeup of blacks in America. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, M, 5:30-8:30, ApH 321, Sciplin
Winter Qtr, ★Sec 2, M, 5:30-8:30, ApH 127,
Sciplin (Limit 20)

GC 1836 ASIAN-AMERICAN LITERATURE. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Examines the Asian experience in America, both historical and contemporary, through literary works produced by Asian-Americans. (No prereq. Limited to 35)

Spring Qtr, ★Sec 1, M, 5:30-8:30, ApH 302,
Gidmark

Genetics and Cell Biology (GCB)

(250 Biological Science: 624-3003)

College of Biological Sciences

Textbooks for GCB courses on the Minneapolis campus are available at the Minnesota Book Center in Williamson Hall (625-6000); books for courses on the St. Paul campus are available at Books Underground on the St. Paul campus (624-9200).

Robert McKinnell, Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Genetics and Cell Biology. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

GCB 3002 HUMAN GENETICS, SOCIAL AFFAIRS. 3 credits, §3022, §Biol 1101, §Biol 5003; 4 credits with term paper, tuition* each credit: Resident \$82.50; Non-resident \$239.25.

For students in programs not directly related to biological sciences. Heredity and basic genetic mechanisms with an emphasis on humans. Relationship between human genetics and disease, family planning, gender, behavior, and race. Ethical/societal issues concerning human genetics and modern genetic technologies. (No prereq)

Winter Qtr, Sec 1, W, 6:20-8:50, FordH 115

GCB 3008 THE BIOLOGY OF CANCER. 3 credits, §Nurs 5881, tuition*: Resident \$247.50; Non-resident \$717.75.

Biological aspects of etiology, phylogeny, and cellular processes involved in neoplasia. Growth and differentiation of normal and cancer cells. The history of cancer research. (Prereq Biol 1009. Meets concurrently with Nurs 5881)

Spring Qtr, Sec 1, W, 6:30-9, BioSci 12, StP
Campus, McKinnell

GCB 3022 GENETICS. 4 credits, §Biol 5003, tuition*: Resident \$330; Non-resident \$957. (IS)

Not intended for biology majors. Mechanisms of heredity, their implications for biological populations and applications to practical problems. (Prereq Biol 1009. Meets concurrently with 5022. A joint Day/Extension class)

Winter Qtr, ●Sec 1, TTh, 5:30-7:10, ClaOff B45,
StP Campus

(See also Biology and Biochemistry)

GCB 5022 GENETICS. 3 credits, §3022, §Biol 5003, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

See course description for 3022. (No prereq. Not open to graduate students in genetics. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3022. A joint Day/Extension class)

Winter Qtr, ●Sec 1, TTh, 5:30-7:10, ClaOff B45,
StP Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Geo-Engineering (GeoE)

(See Civil Engineering)

Geography (Geog)

(414 Social Sciences: 625-6080)

College of Liberal Arts

Textbooks for most Geog courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also General College; and The Compleat Scholar noncredit courses)

John S. Adams, Professor
Ward J. Barrett, Professor
John R. Borchert, Regents' Professor Emeritus
Dwight A. Brown, Professor
Philip J. Gersmehl, Professor
John Fraser Hart, Professor
Mei-Ling Hsu, Professor
Katherine M. Klink, Assistant Professor
Helga Leitner, Associate Professor
Fred E. Lukermann, Professor Emeritus
Judith A. Martin, Associate Professor
Robert B. McMaster, Associate Professor
Cotton Mather, Professor Emeritus
Roger P. Miller, Associate Professor
Philip W. Porter, Professor
John G. Rice, Professor
Abdi I. Samatar, Assistant Professor
Joseph E. Schwartzberg, Professor
Earl P. Scott, Professor
Eric S. Sheppard, Professor
Richard H. Skaggs, Professor
Roderick H. Squires, Associate Professor
Connie H. Weil, Associate Professor

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in Geography. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

For information on completing a major in Geography, contact either CEE Counseling (625-2500) or the Geography Undergraduate Advising Office (625-0133).

Geog 1973 GEOGRAPHY OF THE TWIN CITIES. 4 credits, §3973, tuition*: Resident \$280; Non-resident \$812.

Social and physical characteristics of the Twin Cities. Their place in the urban network of the United States. (No prereq. Meets concurrently with 3973. A joint Day/Extension class)

Winter Qtr, ●Sec 1, W, 6:20-9, AndH 210, J

Adams

(See also CSch 0191, St. Paul's Historic Lowertown: A Walking Tour)

Geog 3973 GEOGRAPHY OF THE TWIN CITIES. 4 credits, §1973, tuition*: Resident \$294; Non-resident \$852.60.

See 1973 for description. (No prereq. Meets concurrently with 1973. A joint Day/Extension class)

Winter Qtr, ●Sec 1, W, 6:20-9, AndH 210, J
Adams

Geog 5132 SOUTH AMERICA. 4 credits, §LAS 5132, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Physical resources, population, agriculture, manufacturing, and transportation in countries of South America. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with LAS 5132. A joint Day/Extension class)

Winter Qtr, ●Sec 1, M, 6:20-8:50, BlegH 415

Geog 5562 INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Basic concepts of geographic information systems structure. Theory and applications for geographic research, location and resource analysis, and regional planning. Location principles, data structure, variable attributes. (Prereq jr or sr geography major or grad or landscape architecture major or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 2 Extension students)

Winter Qtr, ★●Sec 1, Lect, T, 6:30-9, AndH 330;
Rec, T, 2:30-4:30, BlegH 455

Winter Qtr, ★●Sec 2, Lect, T, 6:30-9, AndH 330;
Rec, W, 11:15 a.m.-1:15, BlegH 455

Winter Qtr, ★●Sec 3, Lect, T, 6:30-9, AndH 330;
Rec, Th, 2:30-4:30, BlegH 455

Winter Qtr, ★●Sec 4, Lect, T, 6:30-9, AndH 330;
Rec, Th, 6:30-8:30, BlegH 455

Geog 8800 SEMINAR: DEVELOPMENT OF GEOGRAPHIC THOUGHT. 3 credits, tuition*: Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

(Prereq #. Open only to students admitted to the University of Minnesota Graduate School. A joint Day/Extension class)

Spring Qtr, ●Sec 1, W, 7-9, BlegH 430,
Lukermann

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Geology and Geophysics (Geo)

(106 Pillsbury Hall: 624-1333)

Institute of Technology

Textbooks for most Geo courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also The Compleat Scholar noncredit courses in Natural and Physical Sciences)

- Hans-Olaf Pfannkuch, Professor
- E. Calvin Alexander, Jr., Professor
- Robert E. Sloan, Professor
- James H. Stout, Professor
- Paul W. Weiblen, Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Geology. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Geo 1001 INTRODUCTION TO GEOLOGY. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

A nonmathematical introduction to the Earth, its internal structure, processes that shape its surface, theory of plate tectonics, action of streams, waves, wind and groundwater, limnology, fossil fuels and mineral deposits, environmental geology, planetary geology, and the geology of Minnesota. See **Geo 1021 for laboratory**. (No prereq. Meets concurrently with 5051 lecture)

Fall Qtr, Sec 1, T, 6:30-9, SmithH 100, Weiblen

Geo 1002 HISTORICAL GEOLOGY. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS) Evolution of the earth from its origin to the present, with special attention to the succession of physical and biological events of the past 600 million years. (No prereq. Meets concurrently with 5052. Limited to a combined total of 20)

Spring Qtr, ★Sec 1, Lect T, 6:30-9, PillsH 110, Sloan; Lab W, 5:30-7:30, FordH 85

Spring Qtr, ★Sec 2, Lect T, 6:30-9, PillsH 110, Sloan; Lab W, 7:30-9:30, FordH 85

Spring Qtr, ★Sec 3, Lect T, 6:30-9, PillsH 110, Sloan; Lab Th, 5:30-7:30, FordH 85

Spring Qtr, ★Sec 4, Lect T, 6:30-9, PillsH 110, Sloan; Lab Th, 7:30-9:30, FordH 85

(See also CSch 0551, Minnesota Geology: 3.6 Billion Years and Counting)

Geo 1005 GEOLOGIC PERSPECTIVES ON ENERGY. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Introduction to the geologic aspects of energy resources, conventional and unconventional. History of energy use, distribution and amounts of known and potential reserves, environmental aspects and implications of U.S. consumption patterns. (No prereq) Winter Qtr, Sec 1, T, 6:30-9, PillsH 110, Alexander

(See also GC 1112, Science in Context: Human Uses of the Environment; and BGS 3003, Business and the Natural Environment)

Geo 1011 VOLCANOES OF THE EARTH. 4 credits, tuition*: Resident \$280; Non-resident \$812.

A nonmathematical introduction to volcanoes, their origin and distribution on earth and through geologic time; theory of plate tectonics, origin of lava and the earth's interior; the products of volcanoes, types of eruptions and hazards, and impact on climate, vegetation and society. (No prereq)

Fall Qtr, Sec 1, T, 6:30-9, PillsH 110, Stout

Geo 1021 PHYSICAL GEOLOGY LAB: GEOLOGY OF MINNESOTA. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Ten laboratory exercises based on the geology of Minnesota. Labs will introduce bedrock, glacial history, topography, mineral resources, and environmental geology of the state through the use of appropriate minerals, rocks, topographic and geologic maps. See **Geo 1001 for lecture**. Textbooks available only at Beckwith Copy Center, telephone 378-1433. (Prereq 1001 or concurrent enrollment. Meets concurrently with 5051 lab. Limited to 25)

Fall Qtr, ★Sec 1, Th, 5-7, FordH 185

Fall Qtr, ★Sec 2, Th, 5-7, FordH 180

Fall Qtr, ★Sec 3, Th, 7-9, FordH 185

Fall Qtr, ★Sec 4, Th, 7-9, FordH 180

Geo 5051 PHYSICAL GEOLOGY FOR TEACHERS. 4 credits, §1001, 1111, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368. (IS)

An introduction to the scientific methods and the nature of the earth. Survey of the main features of the physical world and the processes that have evoked them. (Prereq 1 term college chemistry or physics; only for students holding degrees in education. Qualified students may register for graduate credit at the University of Minnesota. Lecture meets concurrently with 1001; lab meets concurrently with 1021)

Fall Qtr, Sec 1, Lect T, 6:30-9, SmithH 100; Lab Th, 7-9, FordH 185

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Geo 5052 HISTORICAL GEOLOGY FOR TEACHERS. 4 credits, §1002, 1112, tuition* (includes \$1.50 course fee); Resident \$331.50; Non-resident \$958.50; Resident Graduate credit \$397.50; Non-resident Graduate credit \$793.50; Resident Graduate School credit \$685.50; Non-resident Graduate School credit \$1369.50.

An introduction to the origin of the earth, the physical evolution of its crust through geological time and the biological changes that occurred during its history. (Prereq 1001 or 1111 or 5051 or #; only for students holding degrees in education. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 1002. Limited to a combined total of 20)

Spring Qtr, ★Sec 1, Lect T, 6:30-9, PillsH 110, Sloan; Lab W, 5:30-7:30, FordH 85

Spring Qtr, ★Sec 2, Lect T, 6:30-9, PillsH 110, Sloan; Lab W, 7:30-9:30, FordH 85

Spring Qtr, ★Sec 3, Lect T, 6:30-9, PillsH 110, Sloan; Lab Th, 5:30-7:30, FordH 85

Spring Qtr, ★Sec 4, Lect T, 6:30-9, PillsH 110, Sloan; Lab Th, 7:30-9:30, FordH 85

Geo 5108 ADVANCED ENVIRONMENTAL GEOLOGY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Human impact on the geological environment and the effect of geology/geologic processes on human life from the point of view of ecosystems and biogeochemical cycles. Geologic limits to resources and carrying capacity of the earth. Land use planning, environmental impact assessment, ecogeologic world models. Term paper projects. (Prereq geology core curriculum 1111 through 5201 for majors or equivalent or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ○Sec 1, M, 6:30-9, PillH 110, Pfannkuch

German (Ger)

(231 Folwell Hall: 625-2080)

College of Liberal Arts

Textbooks for most Ger courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Dutch; History; Humanities; PSch 0983, German for Travelers; and REX 0904, The German Language in Minnesota)

Evelyn Firchow, Professor
Anatoly Liberman, Professor
Richard McCormick, Associate Professor
Hanna Schissler, Associate Professor
Jochen Schulte-Sasse, Professor
Wolfgang Taraba, Professor
Ray Wakefield, Associate Professor

Read about language laboratories on page 51.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in German. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Beginning students of German have two course sequences available. Ger 1101-1102-1103 is a sequence with conventional classroom sessions and teacher-student interaction. German 1110 is an individually paced course which has neither obligatory attendance nor conventional classroom sessions. In Ger 1110, students work independently; teacher-student interaction is at the discretion of the student and usually involves tutorial consultation and testing. Ger 1110 is not recommended for students who have not had language-learning experience in a classroom course.

Degree-seeking University of Minnesota students who have already studied German outside the University of Minnesota are required to take a proficiency exam before enrolling in courses above 1103. All students are strongly urged to take a placement test. Contact the Department of German at 625-2080 for more information.

A minor in German can be completed in the evening.

Required Preparatory Courses: 1106 and the Graduation Proficiency Text.

Minor Requirements: 3104, 3105; one course from 3011, 3012, 3013, 3014, 3015, 3016; 12 cr of 3xxx-5xxx elective German courses.

All courses must be taken A-F. Courses taught in translation, except 3604 and 5xxx-level film classes, do not count toward the minor. The minor program must be approved by the Director of Undergraduate Studies.

Semester-Length Courses—All credits listed in the class description are *quarter* credits even though some classes meet on a semester-length schedule. Credits earned in Extension are applicable toward a degree at another institution under the policies determined by that institution. Further information is found on page 37 of this bulletin.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Study and Internships in Austria—A variety of German courses, including internships, are available through the German and Austrian Studies in Graz program. For information, call the Global Campus at 625-3379.

Ger 1000 INDIVIDUALIZED GERMAN FOR NON-DEGREE CREDIT. *This course has been merged with Ger 1110. Former students of Ger 1000 may continue in Ger 1110.*

Ger 1101-1102-1103 BEGINNING GERMAN. 5 credits each quarter, \$1110, tuition each quarter*: Resident \$350; Non-resident \$1015. (IS1101-1102)

Classroom instruction with emphasis on proficiency according to the national ACTFL system. Reception (listening and reading) emphasized first, followed by production (speaking and writing). (No prereq for 1101; 1101 or 1000 or 1 year high school German for 1102; 1102 or equivalent cr of 1110 or 2 years high school German for 1103. Limited to 25)

Fall Qtr, 1101, ★Sec 1, M, 6:20-8:50; Th, 6:20-8, SmithH 121

Fall Qtr, 1101, ★Sec 2, M, 6:20-8:50; Th, 6:20-8, KoltH S134

Fall Qtr, 1101, ★Sec 3, M, 6:20-8:50; Th, 6:20-8, JonesH 11

Fall Sem, 1101, ★Sec 4, M, 6:20-9:30, Phys 157

Winter Qtr, 1102, ★Sec 1, M, 6:20-8:50; Th, 6:20-8, KoltH S132

Winter Qtr, 1102, ★Sec 2, M, 6:20-8:50; Th, 6:20-8, KoltH S133

Spring Sem, 1102, ★Sec 3, M, 6:20-9:30, Phys 157

Spring Qtr, 1103, ★Sec 1, M, 6:20-8:50; Th, 6:20-8, JonesH 4

Spring Qtr, 1103, ★Sec 2, M, 6:20-8:50, KoltH S137; Th, 6:20-8, JonesH 11

Ger 1104-1105-1106 INTERMEDIATE GERMAN. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015.

Classroom instruction with emphasis on proficiency according to the national ACTFL system. Listening, reading, speaking, writing at the Intermediate and Advanced levels on ACTFL scale. (Prereq 1103 or completion of 1110 or the Entrance Proficiency Test for 1104; 1104 for 1105; 1105 for 1106. Limited to 25)

Fall Qtr, 1104, ★Sec 1, M, 6:20-8:50; Th, 6:20-8, CivMinE 213, Taraba

Winter Qtr, 1105, ★Sec 1, M, 6:20-8:50; Th, 6:20-8, AkerH 211, Taraba

Spring Qtr, 1106, ★Sec 1, M, 6:20-8:50; Th, 6:20-8, CivMinE 213, Taraba

Ger 1110 INDIVIDUALIZED BEGINNING GERMAN. 1-3 credits (15 credits maximum), \$1101-1102-1103, tuition each credit*: Resident \$70; Non-resident \$203.

Structure, writing, and comprehension (listening and reading). Students work at own pace with books, computer, audio- and videotapes, earning credit through testing as they progress through material. Teachers available for consultation and testing. Two weeks after the end of the quarter, students who have completed more credits than they registered for should come in to the 101 Wesbrook Hall Registration Office to pay for the additional credits. **No refunds will be given for uncompleted credits.** The continuation course is 1104. (No prereq. Limited to 75)

Fall Qtr, ★Sec 1, W, 6-8:30, first meeting in WaLib 15, subsequent meetings in FolH 147, Wakefield

Winter Qtr, ★Sec 2, W, 6-8:30, first meeting in WaLib 15, subsequent meetings in FolH 147, Wakefield

Spring Qtr, ★Sec 3, W, 6-8:30, first meeting in WaLib 15, subsequent meetings in FolH 147, Wakefield

Ger 3011-3012-3013 CONVERSATION AND COMPOSITION. 4 credits each quarter, tuition*: Resident \$294; Non-resident \$852.60.

Spoken German; composition; development of vocabulary; grammar review. (Prereq 1106 and the Graduation Proficiency Test for 3011; 3011 for 3012; 3012 for 3013. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, 3011, ★Sec 1, TTh, 5:15-7, KoltH S138

Winter Qtr, 3012, ★Sec 2, TTh, 5:15-7, FolH 326

Spring Qtr, 3013, ★Sec 3, TTh, 5:15-7, FolH 104

Ger 3021 BUSINESS GERMAN. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Students learn and use the special terms and expressions needed to deal with everyday situations in business, banking, and personal affairs. This course should be of particular interest to anyone planning to live and do business in Germany. Material includes authentic documents from banks, courts, and public administration. (Prereq 3013 or equivalent. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★Sec 1, W, 6:20-8:50, FolH 116

Ger 3104 READING AND ANALYSIS OF PROSE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Reading fluency; appreciation of literary values through literary interpretation and familiarization with critical terminology. *Introductory course for a major or minor in German.* (Prereq 1106 or the Graduation Proficiency Test. Limited to 25)

Winter Qtr, ★Sec 1, M, 5:15-7:45, KoltH S134, Schulte-Sasse

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Ger 3105 READING AND ANALYSIS OF DRAMA AND POETRY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Reading fluency; appreciation of literary values through literary interpretation and familiarization with critical terminology. *Introductory course for a major or minor in German.* (Prereq 1106 or the Graduation Proficiency Test. Limited to 25)

Fall Qtr, ★Sec 1, M, 5:15-7:45, AmundH 104

Ger 3604 LITERATURE, HISTORY, AND THE GERMAN FILM. 4 credits, tuition* (includes \$10 course fee): Resident \$304; Non-resident \$862.60.

An introduction to German film, in which the German cinema is examined against the background of Germany's cultural and socio-political history. We will consider cinematic adaptations of literary works, cinematic depictions of twentieth-century German history, and the various formal strategies employed in such films. Filmmakers studied will include such directors of the "New German Cinema" as Brückner, Sanders-Brahms, Schlöndorff, von Trotta, etc. Literary works to be read will include texts from such authors as Heinrich Böll and Theodor Fontane. Requires no knowledge of German. *May be taken for credit toward major or minor in German if student registers A-F and does a portion of the reading in German.* (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, W, 6:20-9:40, FolH 38, McCormick

Ger 3610 GERMAN AUTHORS IN TRANSLATION: FRIEDRICH NIETZSCHE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Reading and analysis of major works and ideas of this important 19th-century German philosopher, writer, and poet. *Not open for credit toward a major or minor in German.* Requires no knowledge of German. (No prereq)

Spring Qtr, Sec 1, T, 6:20-9, NichH 109

Ger 3641 INTRODUCTION TO GERMAN FOLKLORE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

The traditional folklore genres; charms (magic), legends, fairy tales, ballads. *Not open for credit toward a major or minor in German.* Requires no knowledge of German. (No prereq)

Winter Qtr, Sec 1, W, 6:20-9, FolH 134, Liberman

Ger 5011 ADVANCED COMPOSITION AND CONVERSATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Grammar review, oral presentations, many written assignments. (Prereq 3013 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★Sec 1, MTh, 4:40-6:20, FolH 344, Firchow

Ger 5510 TOPICS IN CONTEMPORARY GERMAN CULTURE: FEMINISM IN GERMANY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Contemporary feminism in Germany. Focal points are (1) the legacy of National Socialism, and (2) the impact of unification/the GDR experience on the feminist debate. Taught in German. (Prereq 3513 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, Sec 1, Th, 4:40-6:40, FolH 134, Schissler

Ger 5623 NEW GERMAN CINEMA. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

West German cinema, 1962 to the present. From early acclaim in the mid 1960s (Schlöndorff, Kluge) to the attainment of international stature by the mid-1970s (Herzog, Fassbinder, Wenders, von Trotta); feminist and avant-garde films; the crisis of the 1980s. *May be taken for credit toward a major or minor in German if student registers A-F and does a portion of the readings in German.* (Prereq 3604 or other 3xxx-level film studies course or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, Sec 1, W, Lect, 4:40-6:35, FolH 38, McCormick; W, Film Showing, 7:15-9:30, FolH 38

Reading German—Ger 0221 and 0222 are specifically designed for individuals who desire only a reading knowledge of the language. The German language requirement for an advanced degree may be satisfied by passing Ger 0222 with a grade of B or better (0222 must be taken on an A-F basis). Graduate students should check with their advisers for specific language requirements in their field of study.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Ger 0221 READING GERMAN. No credit, tuition*: \$280.

This course is designed to help students acquire a reading knowledge of basic German as rapidly as possible. No prior knowledge of German is required. Grammar is reduced to a minimum. The course progresses from intensive reading of simple material to selections of moderate difficulty. Vocabulary building and analysis of compound words are emphasized.

Must be taken S-N. (No prereq)

Fall Sem, Sec 1, M, 6:20-8:30, AkerH 215

Ger 0222 READING GERMAN. No credit, tuition*: \$280.

This course is designed to give students experience in intensive reading of German scholarly texts and enable graduate students to satisfy departmental requirements for an advanced degree. Graduate students achieving a grade of B or better in 0222 should bring their Graduate School language certification cards to 231 Folwell for signature. **Must be taken A-F.** (Prereq 0221 or 2 quarters of beginning German or 2 years of high school German)

Spring Sem, Sec 1, M, 6:20-8:30, AkerH 215

German 0221 and 0222 are also offered as Summer Evening Extension Classes.

Gerontology

See page 482

Global Campus

See page 466

Greek (Grk) and Modern Greek (MdGk)

See Classical and Near Eastern Studies

Health

(See Public Health)

Health Sciences

Please see the following alphabetical listings for course offerings:

Adult Psychiatry
 Biochemistry
 Biological Sciences
 Cell Biology and Neuroanatomy
 Child and Adolescent Psychiatry
 Clinical Laboratory Science
 Family Practice and Community Health
 General College
 Health Science Units
 History of Medicine and Technology
 Hospital Administration
 Microbiology
 Nursing
 Pharmacognosy
 Physiology
 Physical Medicine and Rehabilitation
 Public Health

Health Science Units (HSU)

(W42 Centennial Hall: 624-7102)

Health Sciences

Textbooks for most HSU courses are available at the Health Sciences Bookstore (625-8600).

(See also Anth 5920, Topics in Anthropology: Anthropology of AIDS; Family Social Science; and PubH 5010, Public Health Approach to AIDS)

John D. Allison, Associate Professor
 S. Bruce Benson, Associate Professor
 Rondell Berkeland, Director of Occupational Therapy
 Janet Berkseth, Assistant Professor
 Corine T. Ellingham, Associate Professor of Physical Medicine and Rehabilitation
 Maymie J. Eschwey, Lecturer, School of Public Health
 Barton W. Galle, Assistant Professor
 David Garloff, Director, Health Sciences Learning Resources
 Karen Karni, Associate Professor
 Thomas McKennell, Assistant Professor and Director of Pharmacy Continuing Education
 James Meland, Research Associate, Epidemiology
 Cynthia J. Meyer, Lecturer in Family Social Science
 Mary Mueller, Assistant Professor
 Kathleen Newell, Associate Professor
 Sharon Ostwald, Assistant Professor

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Frank Rhame, Assistant Professor, Medical School,
Infection Control Department

James Rothenberger, Instructor

Greg Sales, Associate Professor, College of Education
James Schaefer, Director, Epidemiology

Suzanne J. Schoenfelt, Instructor, College of
Pharmacy, School of Nursing

Barbara A. Spradley, Associate Professor, Public
Health Administration

Robert E. Yahnke, Associate Professor

Graduate Credit—Students who wish to offer 5-level Health Science Units (HSU) courses toward M.Ed., M.P.H., and PharmD may do so under the terms of their approved degree programs. However, HSU courses do not qualify for *Graduate School* credit. Students who wish to obtain Graduate School credit for a 5-level course that is jointly listed with an HSU course must register for the course *under the other department's course number and designator*.

HSU 3003 FUNDAMENTALS OF ALCOHOL AND DRUG ABUSE. 2 credits, §PubH 3003, tuition*: Resident \$204; Non-resident \$591.60.

See PubH 3003 for description. (No prereq. Meets concurrently with HSU 5032, PubH 3003, 5003)

Spring Qtr, Sec 1, Th, 6:35-8:35, MoosT 2-520,
Rothenberger

(See also REX 0324, Alcohol and Degenerative Diseases)

HSU 3005 ORIENTATION TO THE HEALTH SCIENCES. 2 credits, tuition*: Resident \$204; Non-resident \$591.60.

An overview of health science professions through lectures, demonstrations, videos, and tours. Designed to provide factual information and guidance for students considering a health science career. Evaluation will be based on class participation and individual student projects. Must be taken S-N. (No prereq. Limited to 100)

Winter Qtr, ★Sec 1, T, 4:15-6, MoosT 2-530,
Karni, Newell

HSU 5001 INTERDISCIPLINARY TEAM TRAINING IN HEALTH SERVICES DELIVERY. 3 credits, §PubH 5013, SW 5013, tuition*: Resident \$306; Non-resident \$887.40.

See PubH 5013 for course description. (Prereq #. See note about graduate credit above. Meets concurrently with PubH 5013, SW 5013. A joint Day/Extension class limited to a combined total of 12)

Spring Qtr, ★Sec 1, W, 5:45-8:45, HSUnitF 2-110,
2-140, Berkeland

HSU 5007 HEALTH LEADERSHIP AND EFFECTING CHANGE. 3 credits, §PubH 5727, tuition*: Resident \$306; Non-resident \$887.40.

Application of a broad theoretical base in planned change to solve managerial and organizational problems in students' roles as leaders in the health professions. (Prereq Public Health or other health sciences grad students interested in becoming more effective leaders and change agents in their professional roles or written #. See note about graduate credit above. Meets concurrently with PubH 5727. A joint Day/Extension class limited to a combined total of 5 Extension students)

Winter Qtr, ★Sec 1, W, 4:40-7:25, Mayo D326,
Spradley

HSU 5009 MULTIDISCIPLINARY PERSPECTIVES ON AGING. 4 credits, §AdEd 5440, §CPsy 5305, Phar 5009, PA 5414, SW 5024, Soc 5960, PubH 5737, tuition*: Resident \$408; Non-resident \$1183.20.

See course description for Soc 5960. (No prereq. See note about graduate credit above. Meets concurrently with AdEd 5440, CPsy 5305, Phar 5009, PA 5414, PubH 5737, Soc 5960, SW 5024. A joint Day/Extension class)

Fall Qtr, ★Sec 1, MW, 4:40-6:25, MoosT 2-690
(Limited to a combined total of 37 Extension students)

Spring Qtr, Sec 2, MW, 4:40-6:25, MoosT 2-690

HSU 5010 PUBLIC HEALTH APPROACHES TO AIDS. 3 credits, §PubH 5010, tuition*: Resident \$306; Non-resident \$887.40.

A survey of HIV infection from a public health perspective with emphasis on intervention. Topics include epidemiological and clinical features of HIV infection, the impact and response of affected communities and populations, and behavior change principles as they apply to communities, schools, and social policy. Community resources supplement lectures with case presentations. (No prereq. See note above about graduate credit. Meets concurrently with PubH 5010. A joint Day/Extension class)

Fall Qtr, Sec 1, W, 4:40-7:20, MoosT 2-530,
Rothenberger, Rhame

Spring Qtr, Sec 2, W, 4:40-7:20, MoosT 2-620,
Rothenberger, Rhame

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

HSU 5011 THE TEACHING-LEARNING PROCESS IN THE HEALTH CARE SETTING. 3 credits, §PubH 5064, tuition*: Resident \$306; Non-resident \$887.40.

Learning activities include lectures, discussion, written assignments, and projects. Activities designed to meet the professional needs of the student. (No prereq. See note about graduate credit above. A joint Day/Extension class)

Spring Qtr, ★Sec 1, M, 3:35-6:20, MoosT 2-571, 2-585, Garloff

HSU 5013 SYSTEMS APPROACH TO THE DESIGN OF INSTRUCTION. 3 credits, §CISy 5201, tuition*: Resident \$306; Non-resident \$887.40.

See CISy 5201 for course description. (No prereq. See note about graduate credit above. Meets concurrently with CISy 5201. A joint Day/Extension class limited to a combined total of 25 Extension students)

Fall Qtr, ★Sec 1, Th, 4:15-7, PeikH 335, Sales

HSU 5017 WRITTEN COMMUNICATION SKILLS FOR HEALTH PROFESSIONALS. 3 credits, §Nurs 5720, tuition*: Resident \$306; Non-resident \$887.40.

Students meet in workshop sessions where they critique the work of class participants. Throughout the course, emphasis is on organization, style, clarity of presentation, conciseness, accuracy, transitions, consistency, and writing mechanics. Students also examine journal articles, style, the work of professional authors, and other writing guidelines. Depending on the interest of class members, some emphasis will be placed on writing journal articles for publication. A fair amount of outside reading is required. The course works best for students who are already in the process of writing or trying to publish a paper. The class serves as the structure for students to compose their own work. (No prereq. Students seeking graduate credit should enroll in Nurs 5720. Meets concurrently with Nurs 5720. Limited to a combined total of 15)

Winter Qtr, ★Sec 1, T, 4-6:30, MoosT 15-250, Schoenfelt

HSU 5027 HUMAN SEXUAL BEHAVIOR. 5 credits, §FSoS 5001, tuition*: Resident \$510; Non-resident \$1479.

Multidisciplinary approach to human sexuality, with emphasis on sexual development through individual and family life cycles. Oriented toward applying scientific knowledge to the promotion of sexual health through individual, family, and community services. (Prereq upper division standing and 12 credits in social, behavioral or health science; or graduate status

in behavioral, social, educational, health science or human service program; or #. See note about graduate credit above. Meets concurrently with FSoS 5001. A joint Day/Extension class limited to a combined total of 50)

Fall Qtr, ★Sec 1, Th, 5:30-9:40, McNH 33, StP Campus

Winter Qtr, ★Sec 2, Th, 5:30-9:40, MoosT 2-530

HSU 5030 HUMANITIES AND AGING. 2 credits, §Phar 5008, tuition*: Resident \$204; Non-resident \$591.60.

An examination of aging—through the perspectives of literature, music, art, philosophy, and history. Discussion will focus on such topics as the historical experience of today's elderly cohort, paternalism, generational conflict, cross-cultural ceremonies of aging, and changing attitudes toward the elderly in America. (No prereq. May not be taken for graduate credit at the University of Minnesota. Meets concurrently with Phar 5008. A joint Day/Extension class)

Spring Qtr, Sec 1, Th, 4:40-6:25, Aph 302, Yahnke

HSU 5031 BIOLOGY OF AGING. 2 credits, §Phar 5007, §SAPh 5007, tuition*: Resident \$204; Non-resident \$591.60.

Offered via interactive television between two sites, with students at both locations. Biological theories of aging are reviewed; biological changes associated with aging in selected organ and sensory systems are studied. Other topics examined are the nutritional needs of the elderly and their use of medications. Physical changes due to normal aging are contrasted with those having a pathological basis. (No prereq. See note about graduate credit above. Meets concurrently with Phar 5007 and SAPh 5007. A joint Day/Extension class)

Winter Qtr, Sec 1, Th, 4:40-6:25, MoosT 5-125, McKennell

(See also GC 1136, Biological Aspects of Aging)

HSU 5032 FUNDAMENTALS OF ALCOHOL AND DRUG PROBLEMS. 2 credits, §PubH 5003, tuition*: Resident \$204; Non-resident \$591.60.

See PubH 3003 for description. (Prereq sr or grad. See note about graduate credit above. Meets concurrently with 3003, PubH 3003, 5003)

Spring Qtr, Sec 1, Th, 6:35-8:35, MoosT 2-520, Rothenberger

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

(See also Family Social Science)

HSU 5040 DYING AND DEATH IN CONTEMPORARY SOCIETY. 3 credits, §PubH 5040, §Mort 5040, tuition*: Resident \$306; Non-resident \$887.40.

Taught in conjunction with members of the Mortuary Science staff. (Prereq Health Science major, School of Public Health major, education senior, Mortuary Science major, or written #. See note about graduate credit above. Meets concurrently with PubH 5040. A joint Day/Extension class)

Winter Qtr, ●Sec 1, W, 4:40-7:20, MoosT 2-690, Rothenberger

HSU 5210 TERMINOLOGY OF THE HEALTH SCIENCES. 2 credits, §Phar 5210, tuition*: Resident \$204; Non-resident \$591.60.

A self-study course that has been designed to provide students with a working knowledge of the terminology utilized in the health sciences. There are no formal class sessions. Students take four tests during the term, and the schedule for these is provided at the beginning of each term, when orientation sessions are held. For information, call 624-2442 before the first day of the term, or go to room 5-120 HSUnitF during regular office hours. (No prereq. May not be taken for graduate credit at the University of Minnesota. Meets concurrently with Phar 5210. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Arr (call 624-2442), McKennell

Winter Qtr, ●Sec 2, Arr (call 624-2442), McKennell

Spring Qtr, ●Sec 3, Arr (call 624-2442), McKennell

HSU 5297 REHABILITATION: AN INTERNATIONAL PERSPECTIVE. 3 credits, §PMed 5297, tuition*: Resident \$306; Non-resident \$887.40.

Explores physical medicine and rehabilitation as well as prevention issues abroad. The seminar format focuses on cultural factors which influence health and health services. **Must be taken S-N.** (Prereq rehab, health or community professional qualified students, or #. See note about graduate credit above. Meets concurrently with PMed 5297. Limited to a combined total of 20)

Spring Qtr, ★Sec 1, Th, 4:45-7:30, MoosT 2-690, Ellingham, Eschwey

Health, Environmental

(See Public Health)

Hebrew

(See Area Studies Programs, page 75; and the Institute of Languages and Literatures, page 237)

Higher Education (HiEd)

See Educational Policy and Administration (EdPA) for former HiEd listings, page 149.

History (Hist)

(614 Social Sciences: 624-2800)

College of Liberal Arts

Textbooks for most Hist courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also Afro-American and African Studies; Ancient Studies; Area Studies Programs; the Institute of Languages and Literatures; Interdepartmental Study Courses, page 244; Political Science; General College social and behavioral science courses; The Compleat Scholar noncredit courses; History of Science and Technology; Religious Studies; and Women's Studies)

Bernard S. Bachrach, Professor

Hyman Berman, Professor

Marilyn Bowman, Lecturer in Chicano Studies

Kinley J. Brauer, Professor

Thomas Buckely, Associate Professor, General College

Dan Doyle, Teaching Assistant

Martha Edwards, Teaching Assistant

Caesar Farah, Professor

Edward Farmer, Professor

George Green, Associate Professor

Kevin Hankeness, Teaching Assistant

Allen Isaacman, Professor

Thomas Kelly, Professor

David Kopf, Professor

Patricia Kulisheck, Teaching Assistant

Byron K. Marshall, Professor

Michael Metcalf, Professor

Darryl Morris, Teaching Assistant

David Noble, Professor

Richard Rudolph, Professor

Christopher Simer, Teaching Assistant

Theofanis G. Stavrou, Professor

John Thayer, Professor

James D. Tracy, Professor

John Wrathall, Teaching Assistant

William E. Wright, Professor

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

A major in History can be completed in the evening.

Those courses required in the major are offered every two years. Interested students should discuss plans with an adviser (625-2500).

B.A. Major Sequence**Required Preparatory Courses**

At least three introductory (1000-level) history courses (completed in first 2 years when possible). Juniors and seniors may substitute 3000-5000-level equivalent courses.

In addition to the CLA second language requirement, students planning a graduate program in history should acquire a reading knowledge of one or more languages early in their undergraduate studies.

Major Requirements

Minimum of 10 3000-5000-level history courses, to include: Four courses (excluding survey courses) in a field of concentration.

3955 Introduction to Historical Research—taken prior to 3961

3961 Major Paper—completed during senior year

Distribution of the 13 Required Courses

Among the 13 1000, 3000, and 5000-level courses required, students must satisfy both the chronological and the geographical distribution requirements:

1. *Chronological*—At least 2 courses from the pre-modern period, and at least 2 courses from the modern period.

2. *Geographical*—At least one course in each of three different geographical areas.

You need not be majoring in History to register for these classes.

A minor in History is also available. Interested students should call CEE Counseling, 625-2500.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in History. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Continuing Education for Women (CEW) section available in the following course: Hist 1307

Hist 1017, 1018 INTRODUCTION TO WORLD HISTORY. 4 credits each quarter, §1012, 1013, 1012H, 1013H, tuition each quarter*: Resident \$280; Non-resident \$812. (IS 1012, 1013)

1017: World civilizations in the era of global contact, 1450-1960. Linking the globe through trade and migration; cultural, racial, and religious contact and clash in the Americas, Asia, and Africa; family farms

to plantation agriculture; European industrialization, individualism, nationalism, and imperialism; independence movements, decolonization, and the colonial heritage. 1018: The world today and its recent past. War and Cold War; expansion of the American and Soviet economic, political and cultural systems, dominant culture, and minority questions; contemporaneous developments in the Third World; global order; movements for peace, ecology, and human right. (No prereq)

Fall Qtr, 1017, Sec 1, M, 6-9, BlegH 330

Spring Qtr, 1018, Sec 1, M, 6-9, Law 1

Hist 1026, 1027, 1028 HISTORY OF WESTERN CIVILIZATION. 4 credits each quarter, §1021, 1022, 1023, tuition each quarter*: Resident \$280; Non-resident \$812.

Fundamental survey of the political, cultural, and social development of the West. Writing is emphasized in this course. 1026: Surveys the civilizations of ancient Egypt, Mesopotamia, Greece, and Rome from the beginnings to 500 A.D. 1027: Covers Byzantine, Islamic, and Western European civilizations from 500 to 1650 A.D. 1028: Examines European civilizations from 1650 to the present day. Courses need not be taken in sequence. (No prereq)

Fall Qtr, 1027, Sec 1, M, 6-9, BlegH 130, Doyle

Winter Qtr, 1028, Sec 1, M, 6-9, BlegH 155

Spring Qtr, 1026, Sec 1, M, 6-9, BlegH 250

Hist 1307, 1308 AMERICAN HISTORY. 4 credits each quarter, §1301, 1302, tuition each quarter*: Resident \$280; Non-resident \$812. (IS)

Survey of political, economic, and social history of the United States with emphasis on forces that resulted in the emergence of Modern America. 1307: Colonial, early national period from the Revolution through Civil War and Reconstruction. 1308: Modern America from 1880 to the present. (No prereq)

Fall Qtr, 1308, Sec 1, W, 6:20-8:50, AndH 370

Winter Qtr, 1307, Sec 1, M, 1-3:30, MacP. Offered through Continuing Education for Women

Spring Qtr, 1308, Sec 2, W, 6:20-8:50, AndH 370

Hist 1305 RACIAL MINORITIES IN AMERICAN HISTORY. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

A survey of the development of American society focusing on the role of Afro-Americans, American Indians, Asian Americans, and Hispanic Americans. Concepts of cultural pluralism, racism, and inter-group relations will be explored within a comparative historical framework. (No prereq)

Spring Qtr, Sec 1, T, 6:20-8:50, AndH 270

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Hist 3001, 3002, 3003 INTRODUCTION TO MODERN EUROPEAN HISTORY SINCE THE MIDDLE AGES. 4 credits each quarter, §1001, 1002, 1003, tuition each quarter*: Resident \$294; Non-resident \$852.60.

3001: Western European civilization to 1715. 3002: Revolution, liberalism, and nationalism to 1870. 3003: 1870 to recent times. (No prereq)

Fall Qtr, 3002, Sec 1, W, 6:20-8:50, BlegH 140, Morris

Winter Qtr, 3003, Sec 1, W, 6:20-8:50, BlegH 155, Wright

Spring Qtr, 3001, Sec 1, W, 6:20-8:50, BlegH 250, Thayer

Hist 3051 ANCIENT CIVILIZATION. 4 credits, §1051, tuition*: Resident \$294; Non-resident \$852.60.

The history of civilization of the ancient world to 500 B.C. (No prereq)

Fall Qtr, Sec 1, T, 6:20-8:50, BlegH 5, Kelly

Hist 3052 ANCIENT CIVILIZATION. 4 credits, §1052, tuition*: Resident \$294; Non-resident \$852.60.

History and civilization of the ancient world. 500-146 B.C. (No prereq)

Winter Qtr, Sec 1, T, 6:20-8:50, BlegH 245, Kelly

Hist 3053 ANCIENT CIVILIZATION. 4 credits, §1053, tuition*: Resident \$294; Non-resident \$852.60.

History and civilization of the ancient world, 146 B.C. to A.D. 337. (No prereq)

Spring Qtr, Sec 1, T, 6:20-8:50, BlegH 105, Edwards

Hist 3101 INTRODUCTION TO MEDIEVAL HISTORY. 4 credits, §Hist 1022, tuition*: Resident \$294; Non-resident \$852.60.

Europe from the decline of Rome to the early Renaissance; politics, institutions, society, economy, and culture of the Middle Ages. (No prereq)

Fall Qtr, Sec 1, W, 6:20-8:50, BlegH 5

(See also MeSt 1001, An Introduction to the Middle Ages)

Hist 3245 HISTORY OF EASTERN EUROPE: 19TH AND 20TH CENTURIES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Poland, Czechoslovakia, Hungary, Romania, and Yugoslavia. Nationalism and formation of national states; fascism and World War II. Jews in Eastern Europe; communist takeovers; society in communist Eastern Europe today. (No prereq)

Fall Qtr, Sec 1, W, 6:20-8:50, BlegH 150, Rudolph

Hist 3348 WOMEN IN MODERN AMERICA: 1890-1980. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Women in the United States from the late Victorian era to the present changes in labor force participation, family patterns, sexuality, education, feminism; images of women from Gibson girl to feminine mystique. (No prereq)

Spring Qtr, Sec 1, M, 6:20-8:50, BlegH 415

Hist 3401 SURVEY OF LATIN AMERICAN HISTORY: COLONIAL PERIOD TO 1800. 4 credits, §LAS 3401, tuition*: Resident \$294; Non-resident \$852.60.

The pre-Hispanic and colonial period to 1800, with emphasis on social, cultural, and economic aspects. (No prereq. Meets concurrently with LAS 3401)

Winter Qtr, Sec 1, M, 6:20-8:50, BlegH 205

Hist 3402 SURVEY OF LATIN AMERICAN HISTORY: 1800-1929. 4 credits, §LAS 3402, tuition*: Resident \$294; Non-resident \$852.60.

Development of new nations from independence to the emergence of dependent economics. (No prereq. Meets concurrently with LAS 3402)

Spring Qtr, Sec 1, M, 6:20-8:50, HHCtr 60

Hist 3403 SURVEY OF LATIN AMERICAN HISTORY: 1929 TO PRESENT. 4 credits, §LAS 3403, tuition*: Resident \$294; Non-resident \$852.60.

Contradictions of modern societies: economic expansion, dependency, population growth and the social crisis, democratic and authoritarian politics. (No prereq. Meets concurrently with LAS 3403)

Fall Qtr, Sec 1, T, 6:20-8:50, BlegH 140

Hist 3421 THE WORLD AND THE WEST. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Survey of the political, economic, and cultural interaction between the peoples of Europe, Africa, America, and Asia. Era of Western dominance, 1500-1850. Sea power, colonialism, imperialism. (No prereq)

Fall Qtr, Sec 1, W, 6:20-8:50, HHCtr 60, Kopf

Hist 3422 THE WORLD AND THE WEST. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Modern world of Renaissance, nationalism, modernization, and countermodernization, 1850 to present. (No prereq)

Winter Qtr, Sec 1, W, 6:20-8:50, AndH 350, Kopf

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Hist 3424 HISTORY OF MEXICO: PRE-COLUMBIAN PERIOD THROUGH INDEPENDENCE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Indian cultures of Mexico prior to the conquest and subsequent contact between Europeans and Indians during the formation of Mexican society. (No prereq.)
Fall Qtr, Sec 1, T, 6:20-8:50, BlegH 205

Hist 3427 HISTORY OF CUBA AND PUERTO RICO. 4 credits, §Chic 3427, tuition*: Resident \$294; Non-resident \$852.60.

Historical development from Spanish conquest to the present. Conquest and colonization, slavery, Hispanic Caribbean society and culture, Operation Bootstrap, Cuban Revolution. Meets CLA World Studies requirement. (No prereq. Meets concurrently with Chic 3427)

Spring Qtr, Sec 1, W, 6:20-8:50, BuH 120, Bowman

Hist 3431 HISTORY OF AFRICA TO 1800. 4 credits, §Afro 3431, tuition*: Resident \$294; Non-resident \$852.60.

Socioeconomic, political, and cultural development in pre-colonial Africa; emphasis on the slave trade, Islamic revolution, and European commercial penetration. (No prereq. Meets concurrently with Afro 3431)

Fall Qtr, Sec 1, Th, 6:20-8:50, RarigC 616

Hist 3432 HISTORY OF AFRICA: 1800 TO PRESENT. 4 credits, §Afro 3432, tuition*: Resident \$294; Non-resident \$852.60.

Colonial rule, the forced restructuring and underdevelopment of African economies, African resistance, nationalism, and the problems of independence. (No prereq. Meets concurrently with Afro 3432)

Winter Qtr, Sec 1, T, 6:20-8:50, AndH 230

Hist 3441 THE SPANISH-MEXICAN BORDERLANDS AND THE CHICANO EXPERIENCE TO 1900. 4 credits, §Chic 3441, tuition*: Resident \$294; Non-resident \$852.60.

The history of Chicanos to 1900. Meets CLA Cultural Pluralism requirement. (No prereq. Meets concurrently with Chic 3441)

Winter Qtr, Sec 1, W, 6-8:30, ScottH 4, Bowman

Hist 3463 INTRODUCTION TO EAST ASIA IN MODERN TIMES. 4 credits, §EAS 1463, tuition*: Resident \$294; Non-resident \$852.60.

Decline of Asian empires; European and American imperialism; Asian responses; nationalism, social revolution, reintegration, modernization in China, Japan, Vietnam, Korea; retreat of European and American empires. (No prereq. Meets concurrently with EAS 1463)

Winter Qtr, Sec 1, W, 6:20-8:50, BlegH 415

Hist 3465 CHINA'S RESPONSE TO THE WEST, 1750-1911. 4 credits, §5465, §EAS 3465, tuition*: Resident \$294; Non-resident \$852.60.

Eighteenth-century demographic crisis; the growth of Western trade, opium wars and peasant rebellion; early reform efforts, cultural conflicts with the West, imperialism in China, and the first phase of the Chinese revolution. (No prereq. Meets concurrently with EAS 3465)

Fall Qtr, Sec 1, Th, 6:20-8:50, BlegH 140

Hist 3467 THE NATIONALIST REVOLUTION IN CHINA: 1900 TO PRESENT. 4 credits, §5467, §EAS 3467, tuition*: Resident \$294; Non-resident \$852.60.

Failure of the early republic, warlordism, the new culture movement, and the development of Chinese nationalism. The rise of the Nationalist Party and intervention of the Soviet Union, Japan, and the United States, Taiwan, and the People's Republic of China. (No prereq. Meets concurrently with EAS 3467)

Winter Qtr, Sec 1, Th, 6:20-8:50, BlegH 350

Hist 3468 PEOPLE'S REPUBLIC OF CHINA: THE COMMUNIST REVOLUTION, 1900 TO PRESENT. 4 credits, §5468, §EAS 3468, tuition*: Resident \$294; Non-resident \$852.60.

Introduction of Marxism to China, rise of Communist Party, and development of a rural guerilla movement. The career of Mao Tse-tung and developments in the People's Republic. The Great Leap, Cultural Revolution, Gang of Four. (No prereq. Meets concurrently with EAS 3468)

Spring Qtr, Sec 1, Th, 6:20-8:50, BlegH 350

Hist 3471 20TH-CENTURY JAPAN. 4 credits, §5471, §EAS 3471, tuition*: Resident \$294; Non-resident \$852.60.

The development of an industrial society, parliamentary government, mass culture, and imperialism from the Meiji reforms of the late 19th century through World War II to the contemporary period. (No prereq. Meets concurrently with 5471 and EAS 3471)

Fall Qtr, Sec 1, M, 6:20-8:50, BlegH 135, Marshall

Hist 3609 MILITARY HISTORY OF MEDIEVAL WESTERN EUROPE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Concept and conduct of war in Western Europe in the Middle Ages and the relation between military organization and society. (No prereq.)

Winter Qtr, Sec 1, W, 6:20-8:50, BlegH 250,
Bachrach

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Hist 3613 HISTORY OF THE CRUSADES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Results of the medieval crusades from circa 1095-1285. (No prereq)

Spring Qtr, Sec 1, W, 6:20-8:50, RarigC 610, Bachrach

Hist 3633 HISTORY OF GERMANY: EMPIRE TO HITLER, 1848-1945. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Unification, political and economic development, growth of socialism, World War I and revolution, the Weimar years, the Nazi seizure of power. (No prereq)

Winter Qtr, Sec 1, W, 6:20-8:50, SocSci 101, Rudolph

Hist 3637 RUSSIAN HISTORY FROM PETER THE GREAT TO THE PRESENT. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

A survey of Russian history since Peter the Great. (No prereq)

Fall Qtr, Sec 1, W, 6:20-8:50, AndH 350

Hist 3700 TOPICS IN EUROPEAN HISTORY: HISTORY OF CANADA AFTER 1600. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Fall Qtr, Sec 1, W, 6:20-8:50, AndH 230, Kulisheck

Hist 3721 EUROPE IN THE ERA OF WORLD WAR I. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Political, social, and diplomatic background of Europe on eve of World War I; origins of conflict; impact of war and revolution on European society; the peace settlement. (No prereq)

Winter Qtr, Sec 1, M, 6:20-8:50, RarigC 616, Munholland

Hist 3722 EUROPE IN THE ERA OF WORLD WAR II. 4 credits, §3224, tuition*: Resident \$294; Non-resident \$852.60.

The rise of fascism and totalitarian movements in Europe; political and military origins of World War II; the course of the war and its impact upon European society. (No prereq)

Spring Qtr, Sec 1, M, 6:20-8:50, BlegH 235, Munholland

Hist 3723 EUROPE SINCE WORLD WAR II. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Reconstruction of European politics and society; emergence of cold war in Europe; decolonization; economic cooperation and development; East-West relations. (No prereq)

Fall Qtr, Sec 1, T, 6:20-8:50, BlegH 330

Hist 3748 THE AUSTRIAN REPUBLIC FROM WORLD WAR I TO PRESENT. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

The First Republic; the state no one wanted; Anschluss and Hitler; World War II; decade of occupation; the new Austria. (No prereq)

Spring Qtr, Sec 1, T, 6:20-8:50, SocSci 1383, Wright

Hist 3812 CIVIL WAR AND RECONSTRUCTION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Politics and society from 1848 to 1877. The Compromise of 1850 and the "finality" period; nativism and the Know-Nothing movement; party realignment and the rise of the Republican Party; the West; Dred Scott, John Brown, and the coming of the Civil War; Lincoln, Douglas, and the crisis of secession; the rise and fall of the Confederacy; Grant, Sherman, and the politics of total war; emancipation; presidential and radical reconstruction; the Ku Klux Klan; the origins of the Gilded Age; redemption and the Compromise of 1877. (No prereq)

Winter Qtr, Sec 1, Th, 6:20-8:50, BlegH 415

Hist 3821 UNITED STATES IN THE 20TH CENTURY: 1890-1917. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

The growth of industrialism, the corporation and the city; the progressive movement; the emergence of the United States as a world power; World War I; prohibition and women's suffrage; social and cultural conflict in the 1920s; the coming of the Great Depression. (No prereq)

Spring Qtr, Sec 1, Th, 6:20-8:50, BlegH 230

Hist 3822 UNITED STATES IN THE 20TH CENTURY: 1932-1960. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

The Great Depression and the New Deal; the challenge of fascism and the coming of World War II; the origins of the Cold War; the great red scare; the politics and culture of the Eisenhower era; the origins of the civil rights movement. (No prereq)

Winter Qtr, Sec 1, W, 6:20-8:50, AndH 230, Berman

Hist 3823 UNITED STATES IN THE 20TH CENTURY: 1960-PRESENT. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

The conflicts of the 1960s; the New Frontier and Great Society; the black struggle for freedom; the Vietnam War; the new left and counterculture; the women's movement and gay liberation; Watergate and the uncertainties of the 1970s; the Reagan counterrevolution. (No prereq)

Fall Qtr, Sec 1, W, 6:20-8:50, AndH 270, Berman

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Hist 3891 AMERICAN MILITARY HISTORY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Impact of geography, politics, society, technology, and leadership in the development of the military from the colonial period to the Spanish-American War. (No prereq)

Fall Qtr, Sec 1, T, 1:30-4, Law 15, Buckley

Hist 3892 AMERICAN MILITARY HISTORY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Impact of geopolitics, technology, society, and leadership in the rise of land, sea, and air forces to global dominance in the twentieth century. (No prereq)

Winter Qtr, Sec 1, T, 1:30-4, Law 15, Buckley

Hist 3910 TOPICS IN AMERICAN HISTORY: HOMOSEXUALITY, BISEXUALITY, AND TRANSGENDER IN AMERICAN HISTORY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

(No prereq)

Fall Qtr, Sec 1, T, 6:20-8:50, BlegH 215, Wrathall

Hist 3955 INTRODUCTION TO HISTORICAL RESEARCH. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Practical course. Use of documents and different kinds of historical writing. Students read and discuss material representative of contrasting historical perspectives. Faculty guidance. Priority given to history majors. Sign up in department office, 672 SocSci on the West Bank campus. (Prereq written Δ . Limited to 15)

Fall Qtr, ★Sec 1, W, 6:20-8:50, Law 1, Simer

Winter Qtr, ★Sec 2, W, 6:20-8:50, Law 1, Green

Hist 3961 MAJOR PAPER. 5 credits, tuition*: Resident \$367.50; Non-resident \$1065.75.

Required of history majors, usually taken in senior year. Research papers on topics students choose; work largely with original materials (printed documents, memoirs, literature). Sign up in department office, 668 SocSci on the West Bank campus. (Prereq written Δ . Limited to 15)

Winter Qtr, ★Sec 1, W, 6:20-8:50, Law 3, Simer

Spring Qtr, ★Sec 2, W, 6:20-8:50, SocSci 101, Green

Hist 5265 MODERN RUSSIA: 19TH-CENTURY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Political, social, and cultural developments from Alexander to the 1905 revolution. The revolutionary movement and the consequences of the emancipation of the serfs; Russian industrialization. (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, M, 6:20-8:50, Law 1, Stavrou

Hist 5266 MODERN RUSSIA: THE 20TH CENTURY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Fall of the Russian monarchy, revolutions, and Soviet regime. (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, M, 6:20-8:50, Law 3, Stavrou

(See also CScH 0440, Russia and the Russians Through Literature II)

Hist 5471 20TH-CENTURY JAPAN. 4 credits, §Hist 3471, §EAS 3471, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for Hist 3471. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Hist 3471 and EAS 3471)

Fall Qtr, Sec 1, M, 6:20-8:50, BlegH 135, Marshall

History of Medicine (HMed)

(510 Diehl Hall: 624-4416)

Medical School

Most textbooks for HMed courses are available at the Health Sciences Bookstore (625-8600).

Robert G. McKinnell, Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in History of Medicine. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

No Extension classes in HMed offered in 1993-94.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

History of Science and Technology (HSci)

(342E Physics: 624-7069)

Institute of Technology

Most textbooks for HSci courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

John Beatty, Associate Professor
Jole Shackelford, Lecturer

HSci 1812 INTRODUCTION TO HISTORY OF SCIENCE: THE SCIENTIFIC REVOLUTION. 4 credits, §HSci 3812, tuition*: Resident \$280; Non-resident \$812. (IS)

The revival of ancient scientific thought in the Renaissance, and the overthrow of old ideas and methods in the Scientific Revolution of the 17th century. Focuses on how Copernicus, Kepler, Galileo, Harvey, and Newton emphasized an experimental approach to studying nature. (No prereq. Meets concurrently with 3812)

Fall Qtr, Sec 1, W, 6:20-8:50, Phys 210, Shackelford

HSci 3812 INTRODUCTION TO HISTORY OF SCIENCE: THE SCIENTIFIC REVOLUTION. 4 credits, §HSci 1812, tuition*: Resident \$330; Non-resident \$957.

See course description for 1812. (No prereq. Meets concurrently with 1812)

Fall Qtr, Sec 1, W, 6:20-8:50, Phys 210

HSci 5242 THE DARWINIAN REVOLUTION. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Pre-Darwinian conceptions of nature; development and reception of Darwin's theory of evolution by natural selection; also the broader context of the Darwinian Revolution, including religious thought, political theory, and views about proper scientific methodology. (Prereq Biol 1009 or 1101 or #. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, Th, 6:20-8:50, Ecology 108, StP Campus, Beatty

Home Economics Education

(See Vocational and Technical Education)

Honors Opportunities

(115 Johnston Hall: 624-5522)

College of Liberal Arts

Textbooks for HSem courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Chris Anson, Professor of English
Gerald M. Erickson, Professor of Classical and Near Eastern Studies

Special Honors Opportunities are offered by CLA through Extension Classes to all qualified Extension registrants to present appropriate challenges to highly motivated and intellectually superior students, to bring together the very best Extension students, and to provide students with close interaction with some of the University's outstanding faculty. Entry to Honors Opportunities is by special permission, with a 3.50 grade point average as the initial prerequisite.

Honors Seminar (HSem): Honors Seminars are one Honors opportunity. They are often of an interdisciplinary character, deal in some depth with topics not usually central to a regular course, and are intended for students not majoring in the discipline of the seminar instructor. Class size is small, and vigorous student participation is expected. Students with a GPA of at least 3.50 are invited to call the CLA Honors Office, 624-5522, to discuss their interest and qualifications.

HSem 3060 AMERICAN LITERACY AND CULTURAL DIVERSITY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

What is literacy, exactly? What does it mean to have literacy or not to have it? How well does the United States support the development of higher literacy in all its citizens? And what can we learn about the conditions of literacy here in the Twin Cities, by working with children and adults who are struggling to become literate in a sometimes less than supportive society? This course links the academic study of these and other questions with a service-learning component organized in conjunction with local community agencies. In it, students will study a range of perspectives on the nature, development, and present state of literacy in the U.S., with special focus on culturally diverse and disadvantaged people in society. As part of the course work, students will work with a young child or non-English speaking adult at a local agency for two hours a week, helping him or her acquire higher literacy. Through reflection logs and group discussions of the tutoring experience, class participants will link the sometimes abstract academic study of literacy to the real social, political, and educational issues that emerge from the volunteer work. (Prereq 3.50 GPA, special written Δ. Limited to 15)

Winter Qtr, ★Sec 1, M, 6:20-8:50, LindH 305, Anson

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

HSem 3090 EDUCATION AND THE GOOD LIFE: THE CONTROVERSY ABOUT EDUCATION IN 19TH-CENTURY RUSSIA. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

After the beginnings of an "opening up" of Russia to the West by Peter the Great and Katherine II in the 18th century, Russians during the subsequent century seemed to have some choice about the type of society that they would choose for themselves. They saw the advantages, and in some instances necessity, of adopting Western science, technology, and social structure, but also were appalled by many of their concomitants. Consequently, in this intellectually vibrant period, proponents of various social visions presented their views to an "awakening" public: Westernizers, who extolled the benefits of capitalism and parliamentary democracy; *Narodniks* and slavophiles, who believed that Russia had a civilization with unique qualities and a destiny distinct from the West. Since these encounters among social visions and ideas were carried on under the watchful but often unperceptive eyes of the censors, somewhat indirect vehicles of expression were often necessary. One type of indirection was an intense debate about the methods and goals of education; another was the use of the novel as a vehicle for bringing out social issues without censorship. The students in the seminar will examine the historical context of the "debate" about educational goals and methods, and will read and discuss representative writings taken from various viewpoints. The seminar will conclude with the reading and analysis of Turgenev's novel, *Fathers and Children*, which is centered on the issue of social changes and the direction that they should take. (Prereq 3.50 GPA, special written Δ. Limited to 15)

Spring Qtr, ★Sec 1, T, 6:20-8:50, FolH 114, Erickson

Horticultural Science (Hort)

(305 Alderman Hall: 624-4242)

College of Agriculture

Textbooks for most Hort courses are available at Books Underground on the St. Paul campus (624-9200).

(See also Landscape Architecture; Botany; and The Complete and Practical Scholar noncredit courses)

N. Anderson, Instructor
Peter D. Ascher, Professor
James Calkins, Instructor
David W. Davis, Professor
Anne Hanchek, Assistant Professor
Leonard Hertz, Professor
Mary Meyer, Instructor
Peter Moc, Instructor
D. B. White, Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Horticultural Science. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Hort 1010 HOME HORTICULTURE. 4 credits, tuition* (includes \$10 course fee): Resident \$290; Non-resident \$822. (IS)

For non-horticulture majors. Fundamental concepts of plant identification, growth, and culture with practical applications to home landscape, floral design, house plants, and fruit, flower, and vegetable gardening. Lecture and laboratory. (No prereq)

Fall Qtr, Sec 1, W, 6:10-9:30, HrG 172, StP Campus, Moe

(See also PSch 0950, Landscaping the Minnesota Home Grounds)

The following courses are intended for those students who wish to pursue their study of garden culture, plant materials and landscape design beyond the basic levels. The instructional level is established for students interested in professional improvement in horticulture and landscape architecture as well as for the advanced amateur.

Hort 1020 FLORAL DESIGN. 4 credits, tuition* (includes \$40 course fee): Resident \$320; Non-resident \$852.

Design for use in commercial flower shops, including principles and elements of design, wedding and funeral arrangements, corsages, and the decorative use of dried materials, and accessories. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, Th, 6-9:20, AlderH 415 (Lecture), StP Campus, Anderson (Lab meets in AlderH 423)

Winter Qtr, ★Sec 2, W, 6-9:20, AlderH 415 (Lecture), StP Campus, Anderson (Lab meets in AlderH 423)

Hort 1021 WOODY PLANT MATERIALS. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Taxonomy, ecology, and landscape use of trees, shrubs, and evergreens. Lectures, laboratories. (No prereq)

Spring Qtr, Sec 1, T, 6-10 (plus arr), Snyder Research and Education Bldg, Minnesota Landscape Arboretum (West of Rt 41 on Hwy 5), Chaska (Books available at Arboretum Gift Shop)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Hort 1022 HERBACEOUS PLANT MATERIALS. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Taxonomy, ecology, and landscape use of perennial and annual flowers, tender and hardy bulbs, ground covers, wild flowers. Lectures, laboratory, and garden experience. (No prereq)

Spring Qtr, Sec 1, T, 6-10 (plus arr), HrG 172, StP Campus

Hort 1036 PLANT PROPAGATION. 5 credits, tuition* (includes \$5 course fee): Resident \$355; Non-resident \$1020.

Principles and techniques of propagating plants by seeds, cuttings, grafts, buds, layers, division and plant tissue culture. Lectures on principles; laboratories on practice of various propagating techniques. (No prereq. Limited to 20)

Fall Qtr, ★Sec 1, TTh, 5:10-8:10, HrG 172, StP Campus, Ascher

Winter Qtr, ★Sec 2, TTh, 6:15-9:15, HrG 172, StP Campus, Ascher (Limit 30)

Hort 3031 FRUIT SCIENCE. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75.

Principles of tree and small fruit production in temperate climates. Site selection, cultural and management practices, physiological and environmental control of plant development, dwarfing, growth regulating compounds, pest and weed control. Lecture and laboratory. (No prereq)

Winter Qtr, Sec 1, W, 6:20-9:30, HrG 172, StP Campus, Hertz

Hort 3072 TURF MANAGEMENT. 4 credits, tuition*: Resident \$330; Non-resident \$957.

General landscape maintenance and turf culture. Work in areas of industrial grounds maintenance, park and recreation area maintenance, and general lawn care. (Prereq Soil 3125, Hort 1100 or Agro 3020)

Winter Spec Term, Sec 1, M, 6:10-9:30, Feb. 14-Apr. 21 (10 meetings), HrG 172, StP Campus, White. *No late fee through Feb. 7.*

Hort 5034 COMMERCIAL VEGETABLE AGRICULTURE. 5 credits, tuition*: Resident \$412.50; Non-resident \$1196.25; Resident Graduate credit \$495; Non-resident Graduate credit \$990; Resident Graduate School credit \$855; Non-resident Graduate School credit \$1710.

Crop cultural and product handling and use systems in various world regions. History and evolution of species and product development. Seed and stand establishment; propagation; pest management. Applied physiology and genetics of fruit, bulb, tuber initiation; sink development, maturation and quality. Lectures,

laboratories and field trips. (Prereq 3002 or Agro 1010; Soil 3125. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ⓄSec 1, MW, 4-6 (plus arr), HrG 172, StP Campus, Davis

Hospital and Health Care Administration

For information on noncredit conferences or workshops in hospital and ambulatory care administration, please contact Vernon Weckwerth, Box 97 Mayo, telephone 624-0603; or M. Perron, 624-1411.

Housing (Hsg)

(240 McNeal Hall: 624-9700)

College of Human Ecology

(Department of Design, Housing, and Apparel)

PLEASE NOTE: Beginning Winter Quarter 1994, all Hsg courses will be offered as DHA courses. For winter and spring quarter offerings, see the *Design, Housing and Apparel (DHA)* section of this bulletin.

Textbooks for most Hsg courses are available at the Books Underground Bookstore on the St. Paul campus (624-9200).

Evelyn Franklin, Associate Professor
Earl Morris, Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Housing. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Hsg 5465 HOUSING IN WORLD PERSPECTIVE I. 4 credits, \$5865, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Social analysis of housing from around the world; emphasis on population, environment, and social organization of nations as contexts from national policy and housing choices of households. (Prereq 3463 or 3863 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ⓄSec 1, MW, 3:30-6, McNH 216, StP Campus, Morris

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

College of Human Ecology

Courses are listed under the following units:

Design

Includes Design Communication: Graphic and Fiber Arts/Interior Design

Design, Housing, and Apparel

Family Social Science

Includes Alcohol and Drug Counseling Education

Food Science and Nutrition

Housing

Social Work

Textiles and Clothing

Youth Studies

For information about credit courses given in suburban or out-state locations please write or call the College of Human Ecology, 32 McNeal Hall, 1985 Buford Avenue, University of Minnesota, St. Paul, MN 55108; telephone (612) 624-1717.

Humanities (Hum)

(355 Ford Hall: 625-6563)

College of Liberal Arts

Textbooks for most Hum courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also The Compleat Scholar noncredit courses)

Jackson Hershbell, Professor of Classical and Near Eastern Studies
George Kliger, Assistant Professor
David Shupe, Lecturer

Some Extension courses previously offered under Humanities are now offered under Cultural Studies and Comparative Literature.

Most of the courses for a minor in Humanities can be completed in the evening.

Requirements for a Humanities minor

25 credits: One course from the Introduction to Western Civilization sequence (Hist 1021, 1022, 1023 or Hist 1021H, 1022H, 1023H) (5 credits). Three courses from the European Heritage and Modern West sequences (12 credits); two additional 3xxx-5xxx Humanities courses (8 credits). The minor program must be approved by the Humanities Curriculum Coordinator. Not more than one Humanities course in the Minor course program may be taken at the 1xxx level. Not more than one course at the 3xxx-5xxx level in the minor program may be taken on a Directed Study,

Directed Instruction or Independent Study basis. Not more than one course at the 3xxx-5xxx level in the Minor program may be taken on an S-N basis. All courses must be completed with a grade of C or higher (exception: one course may be completed with a grade of S).

You need not be minoring in Humanities to register for these classes.

Hum 1003 HUMANITIES IN THE MODERN WEST III. 4 credits, §3003, §Rhet 1303, tuition*: Resident \$280; Non-resident \$812.

Impact of science, especially evolution theory, on religious and humanistic thought; roots of existentialism; disorientation in modern culture; impressionism. Integrative study of selected works by creative figures such as Kierkegaard, Darwin, Nietzsche, Chekhov, Joyce, Mann, Manet, Monet, Renoir, Degas, Wagner, Debussy, Mahler. (No prereq. Meets concurrently with 3003)

Spring Qtr, Sec 1, M, 6:20-8:50, FolH 104, Shupe

Hum 1004 HUMANITIES IN THE MODERN WEST IV. 4 credits, §Hum 3004, §Rhet 3381, tuition*: Resident \$280; Non-resident \$812. (IS)

Europe, 1914-1940. Ideas and forms of society and culture: Leninist, fascist-Nazi, Freudian, neo-orthodox. Expressionism, dada, surrealism. Integrative study of works by creative figures such as Lenin, Freud, Kafka, Eliot, Duchamp, Klee, Kollwitz, Dali, Picasso, Stravinsky, Schönberg, Bartók, Wright, Gropius. (No prereq. Meets concurrently with Hum 3004)

Fall Qtr, Sec 1, W, 6:20-8:50, FordH 55, Kliger

Hum 1005 HUMANITIES IN THE MODERN WEST V. 4 credits, §Hum 3005, tuition*: Resident \$280; Non-resident \$812.

The Western world, 1940-1970. Existentialism, "the absurd;" searches for identity, commitment; religious trends; influence of oriental spiritual traditions. Integrative study of works by such creative figures as Camus, Sartre, Ionesco, Bultmann, Watts, Pollock, Warhol, Stockhausen, Cage, LeCorbusier, Fellini. (No prereq. Meets concurrently with 3005)

Winter Qtr, Sec 1, W, 6:20-8:50, FordH 55, Kliger

Hum 1111 EUROPEAN HERITAGE: GREECE. 4 credits, §3111, §Rhet 3321, tuition*: Resident \$280; Non-resident \$812. (IS)

Greek civilization; literary and artistic works that have influenced modern Western culture. Epic and lyric poetry, drama, architecture, sculpture, philosophy, religion; Homer, Hesiod, Aeschylus, Sophocles, Euripides, Aristophanes, Plato, Aristotle. (No prereq. Meets concurrently with 3111)

Spring Qtr, Sec 1, W, 6:20-8:50, FordH 155, Hershbell

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Hum 3003 HUMANITIES IN THE MODERN WEST III. 4 credits, §1003, §Rhet 1303, tuition*: Resident \$294; Non-resident \$852.60.

See course description for Hum 1003 (No prereq. Meets concurrently with 1003)

Spring Qtr, Sec 1, M, 6:20-8:50, FolH 104, Shupe

Hum 3004 HUMANITIES IN THE MODERN WEST IV. 4 credits, §Hum 1004, §Rhet 3381, tuition*: Resident \$294; Non-resident \$852.60. (IS)

See course description for Hum 1004. (No prereq. Meets concurrently with Hum 1004)

Fall Qtr, Sec 1, W, 6:20-8:50, FordH 55, Klinger

Hum 3005 HUMANITIES IN THE MODERN WEST V. 4 credits, §Hum 1005, tuition*: Resident \$294; Non-resident \$852.60.

See course description for Hum 1005. (No prereq. Meets concurrently with 1005)

Winter Qtr, Sec 1, W, 6:20-8:50, FordH 55, Klinger

Hum 3111 EUROPEAN HERITAGE: GREECE. 4 credits, §Hum 1111, §Rhet 3321, tuition*: Resident \$294; Non-resident \$852.60.

See course description for Hum 1111. (No prereq. Meets concurrently with 1111)

Spring Qtr, Sec 1, W, 6:20-8:50, FordH 155, Hershbell

Hum 5910 TOPICS IN THE HUMANITIES: C.G. JUNG IN MULTIDISCIPLINARY PERSPECTIVE. 3 credits, tuition*: Resident \$220.50; Non-resident \$639.45; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

An exploration of Jung's psychological theories, their epistemological assumptions, and their applications to cultural anthropology, history, mythology, religion, art and literature, alchemical symbolism, and the relationship of the mental to the physical. (Prereq sr or grad or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Spring Qtr, ★Sec 1, W, 6:20-8:50, FordH 359, Klinger

(See also CSch 0253, Fundamentals of Jungian Psychology)

Human Relations

See EPsy 5135, Workshop in Human Relations

Industrial Education

(See Vocational and Technical Education)

Industrial Engineering/Operations Research (IEOR)

(121 Mechanical Engineering: 625-5842)

Institute of Technology

Textbooks for most IEOR courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Sant R. Arora, Professor of Mechanical Engineering

Edward Barnett, Lecturer in Mechanical Engineering
Russell D. Melton, Lecturer

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in IEOR. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

IEOR 3000 (formerly IEOR 5000) INTRODUCTION TO INDUSTRIAL ENGINEERING ANALYSIS. 4 credits, §IEOR 5000, tuition*: Resident \$330; Non-resident \$957.

Scientific management, mathematical models, methods engineering, work measurement, worker satisfaction and participation, wage payment plans, break-even analysis, incremental costs, the time value of money and the present value concept; cost quality and inventory control; production scheduling, plant locations, and layout; linear programming, PERT, and the systems approach to management problems. (No prereq. May not be taken for graduate credit)

Spring Qtr, Sec 1, Th, 6:10-9:10, MechE 202, Barnett

IEOR 5020 ENGINEERING COST ACCOUNTING, ANALYSIS AND CONTROL. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Basic accounting concepts, financial statements, analysis and control of current assets such as cash, receivables, and inventory; income tax planning, cost analysis, standard costs for product costing, time value of money, quantification of risk and uncertainty, utility theory, cost of capital and capital structure, capital budgeting under capital rationing, management decisions, and investment decisions. (Prereq 3000 and ME 3900 recommended. May not be taken for graduate credit by IEOR grad students)

Fall Qtr, Sec 1, Th, 6:10-9:10, MechE 321, Barnett

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

IEOR 5030 QUALITY CONTROL AND RELIABILITY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

History of quality control, quality policies and objectives, economics of quality, design for system effectiveness, reliability and maintainability, statistical aids to reliability, quality specifications, inspection, acceptance sampling, vendor relations, process control, motivation for quality, quality assurance, and quality control engineering. (Prereq Math 1261, ME 3900. IEOR 3000 recommended. May not be taken for graduate credit by IEOR grad students)

Spring Qtr, Sec 1, W, 6:10-9:10, Arch 60, Arora

IEOR 5311 MANAGEMENT FOR ENGINEERS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Historical development of management concepts; organizational systems and authority relationships; planning, communication and management responsibility. (Prereq IT student or grad, 3000. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, Th, 6:10-9, MechE 221, Barnett

IEOR 5321 INDUSTRIAL SAFETY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Definition and philosophy of safety, safety training, safety requirements for production processes, equipment and plants, industry standards, safety devices, and product safety. (Prereq IT student or grad; IEOR 3000. Qualified students may register for graduate credit at the University of Minnesota. Limited to 35)

Spring Qtr, ★Sec 1, T, 6:10-9, MechE 202

Industrial Relations (IR)

(537 Management/Economics: 624-2500)

Carlson School of Management

Textbooks for most IR courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also Spch 5441, Communication in Human Organizations; and Economics)

Dawn Addy, Lecturer

Ross E. Azevedo, Associate Professor

James W. Beaton, Lecturer

Charles H. Davis, Lecturer

Kenneth L. Gagala, Lecturer

Edward R. Goettl, Industrial Relations Consultant

Raymond A. Noe, Associate Professor

Robert T. Weaver, Associate Professor, Bethel College

Your attention is called to the Industrial Relations Certificate program. See the Degrees and Certificates section of this Bulletin.

Evening Master of Arts in Industrial Relations program—an evening program is offered in Plan A (thesis) or Plan B (non-thesis). Students usually enroll for up to 8 credits a quarter and can complete the program within 8 quarters. Applicants are required to submit scores from the General Aptitude section of the Graduate Record Examination. For GRE information, call (612) 624-3323. For further information about the master's program, call Edie French at (612) 624-5810; or write the Director of Graduate Studies, Industrial Relations Center, University of Minnesota, 271 19th Ave. S., Minneapolis, MN 55455.

Business degree students must take Industrial Relations courses A-F.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in IR. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Note: Students taking Carlson School of Management upper division undergraduate courses through CEE are expected to have completed the equivalent of 90 quarter college credits with a minimum of a "B-" grade average.

IR 0001C SUPERVISION I: ELEMENTS OF SUPERVISION. 3 certificate credits, tuition* (includes \$16 special fee and \$2 course fee): \$228. (IS)

A general discussion of basic principles of supervision in the office and factory. Survey of principles for the handling of day-to-day problems of supervisors, with emphasis upon human relations aspects of such problems. Deals with problems such as selection, induction and training of new employees, employee appraisal, giving orders, handling grievances, discipline, and employee morale. Extensive use of class discussion of practical problems drawn from office and plant situations. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, M, 6-9, BlegH 5 (Limit 30)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

IR 0002C SUPERVISION II: ADVANCED TECHNIQUES OF SUPERVISION. 3 certificate credits, tuition* (includes \$16 special fee and \$2 course fee): \$228.

Emphasizes specialized supervisory techniques based upon principles outlined in Supervision I. Includes discussion of research in supervisory methods and practices and their relative success in application in the office and plant. Methods of supervisory training, morale measurement, job analysis and job evaluation, safety programs, wage and salary administration, principles of organization and communications are among the topics discussed. Extensive use is made of discussion method and case studies. (Prereq 0001C or #)

Winter Qtr, Sec 1, M, 6-9, RarigC 610

IR 3000 LABOR ARBITRATION. 4 degree credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Presents a comprehensive view of arbitration as a dispute settlement technique as used in the field of labor-management relations. Following a general introduction into background of arbitration, laws governing this field for inter- and intrastate commerce industries, and for the mushrooming public sector, are studied. Special emphasis is given to techniques used in analyzing grievances processed through the grievance procedure. Continues to the preparation of material used in the hearing and to the hearing itself. (Prereq at least 90 credits completed or in progress. Meets concurrently with 8000 sec 1. Limited to 30)

Fall Qtr, ★Sec 1, T, 6-9, BlegH 230

IR 3000 POLICY AND PRACTICE IN LABOR LAW. 4 credits. Tentatively scheduled for 1994-95.

IR 3000 COLLECTIVE BARGAINING: THE PUBLIC SECTOR. 4 credits. Tentatively scheduled for 1994-95.

IR 3002 PERSONNEL AND INDUSTRIAL RELATIONS. 4 credits, \$8002, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

An introduction to the human resource management function in organizations. Coverage includes the labor market, recruitment, selection, training, compensation, and labor relations. Topics to be covered are the changing nature of the world of work, emerging legal issues, discrimination in pay and employment, comparable worth, work performance and its assessment, and the effects of technological change on jobs and employment. Involves lecture presentations, discussion, case studies, and simulation exercises. (Prereq at least 90 credits completed or in progress; Econ 1101, Econ 1102, Psy 1001. Sec 2 meets concurrently with IR 8002. Limited to 65)

Fall Qtr, ★Sec 1, Th, 6-9, BlegH 215

Winter Qtr, ★Sec 2, T, 6-9, BlegH 235 (Limited to a combined total of 65)

Spring Qtr, ★Sec 3, W, 6-9, BlegH 235

IR 3007 COLLECTIVE BARGAINING AND LABOR RELATIONS. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

Analysis of the roles of unions and collective bargaining in contemporary American society. Topics covered include negotiations and related policies and practices of employers, employees, unions, legislative bodies, and the public in dealing with questions of worker representation in the private sectors. Coverage includes impact and transference of collective bargaining principles from the union sector to the non-union sector. Involves lecture presentations, discussion, case studies, and bargaining simulations. (Prereq at least 90 credits completed or in progress)

Spring Qtr, Sec 1, M, 6-9, BlegH 350

IR 3010 THE INDIVIDUAL IN THE ORGANIZATION. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

An introduction to the human side of organizations, focusing on workers and how they enter and succeed in the work setting. Coverage includes theories and techniques of employment interviewing; training needs analysis; career planning; management development; turnover, out-placement, and retirement; understanding leadership roles and styles; work motivation, organization culture and job design; and planning for change. Involves lecture presentations, discussion, case studies, and simulation exercises. (Prereq at least 90 credits completed or in progress)

Fall Qtr, Sec 1, W, 6-9, BlegH 225

Winter Qtr, Sec 2, Th, 6-9, BlegH 115

Spring Qtr, Sec 3, T, 6-9, RarigC 610

IR 5000 PERSONNEL AND INDUSTRIAL RELATIONS LAW. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

Designed for the student who needs to understand the growing body of laws and their application to the workplace. Human rights, equal employment, compensation and benefit laws, employee protection laws, labor relations laws, as well as special issues such as wrongful discharge, sexual harassment, defamation, are discussed in the context of Minnesota Federal statutes, case law and their application in the work setting. (Prereq at least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, M, 6-9, BlegH 205, Beaton

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

IR 5000 INTERNATIONAL PERSONNEL AND INDUSTRIAL RELATIONS PRACTICES. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

Designed for the student who needs to understand how the American practices of personnel and industrial relations compare with those practices internationally. Laws, selection, performance management, compensation, and training and development are discussed. (Prereq at least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 2, W, 6-9, Mgmt/Econ 521, Beaton

IR 5000 MANAGING DIVERSITY. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

To manage diverse employees, managers should ask themselves if they are fully tapping the potential capacities of everyone in their department; and if not, if this failure is hampering their ability to meet performance standards. In this course, students investigate diversity and strategize ways to use it. They will examine the theoretical debates surrounding the work force participation of women and minorities as well as the historical position of these groups in the labor force. Through analysis of trait theory and other leadership theories, they explore social phenomena which contribute to the continuation of discriminatory practices. Such practices and the laws surrounding them will be examined. These practices will be framed with a systems, paradigmatic analysis. Students will have the opportunity to examine the formation of their own value systems, learn methods to modify their behavior, and enhance their abilities to manage and utilize diversity. (Prereq at least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota. Limited to 35)

Spring Qtr, ★Sec 3, W, 6-9, BlegH 350, Addy

IR 5000 EMPLOYEE PERFORMANCE: DESIGN APPRAISAL AND MANAGEMENT. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

Designed for the student who needs to understand how work and employee performance are organized,

appraised, and managed in the firm for employee satisfaction and to meet the goals of the firm. Job design standards, employee appraisal systems, and worker satisfaction are discussed. (Prereq at least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 4, Th, 6-9, RarigC 610, Beaton

IR 5002 SYSTEMS OF CONFLICT AND DISPUTE RESOLUTION. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

Theoretical and practical treatment of the settlement of conflict in interpersonal, work-related, community, business, and international settings. Includes lecture presentations, discussion, observation of actual dispute resolution sessions, and laboratory exercises, with participation in various dispute resolution simulations applied to real world conflicts. (Prereq at least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★Sec 1, W, 5:30-9, BlegH 260, Azevedo

IR 8000 LABOR ARBITRATION. 4 credits, tuition* (includes \$16 special fee): Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

See description for IR 3000 sec 1 (No prereq. Open only to students admitted to the University of Minnesota Graduate School. Meets concurrently with 3000 sec 1. Limited to 30)

Fall Qtr, ★Sec 1, T, 6-9, BlegH 230

IR 8000 POLICY AND PRACTICE IN LABOR LAW. 4 credits. **Tentatively scheduled for 1994-95.**

IR 8000 COLLECTIVE BARGAINING: THE PUBLIC SECTOR. 4 credits. **Tentatively scheduled for 1994-95.**

IR 8002 PERSONNEL AND INDUSTRIAL RELATIONS. 4 credits, tuition* Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See description for IR 3002. (Prereq Econ 1101, 1102, Psy 1001. Open only to students admitted to the University of Minnesota Graduate School. Meets concurrently with IR 3002, sec 2. Limited to a combined total of 65)

Winter Qtr, ★Sec 1, T, 6-9, BlegH 235

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Certified Employee Benefits Specialist (CEBS)

David Lutes, Lecturer
David B. Hutchins, Lecturer
Mary L. Komornicka, Lecturer
Karen B. Lewis, Lecturer
Mark Meyer, Lecturer
Patrick Pechacek, Lecturer
Andrew F. Whitman, Professor of Insurance
C. Arthur Williams, Professor Emeritus of Insurance and Industrial Relations

Employee Benefits Specialist courses focus on the fundamental principles underlying the design and operation of employee benefit plans. They are designed for individuals who have responsibilities for employee benefit plans or an interest in the field. All courses carry certificate credit as distinguished from degree credit and are recorded on a transcript available at the University's Admissions and Records Office. Certificate credits may be accepted as meeting degree requirements at the discretion of other colleges and universities.

These offerings also provide formal class work for persons in the Certified Employee Benefits Specialist (CEBS) Program. The CEBS program is a 10-course professional designation program sponsored jointly by the International Foundation of Employee Benefit Plans and the Wharton School of the University of Pennsylvania. This program gives persons the opportunity to earn a professional designation: Certified Employee Benefit Specialist. Up to the present time Continuing Education and Extension has offered nine of the ten CEBS courses—I, II, III, V, VI, VII, VIII, IX, and X.

This year CEE will offer six parts. Some CEBS courses are so close to existing School of Management courses that students should be able to take these existing courses and, with the aid of Learning Guides available from the Foundation and some additional reading, prepare themselves for the CEBS examinations.

For a CEBS brochure listing courses and requirements of the program, please write to: CEBS Registrations, International Foundation of Employee Benefit Plans, P.O. Box 69, Brookfield, WI 53008; or call (414) 786-6700.

CEBS Registration—If interested in registration for the CEBS examinations, an initial nonrefundable fee is required. This registration allows candidates to apply for the CEBS examinations (fees are extra), establishes their personal file at the International Foundation of Employee Benefits Plans, and includes the CEBS newsletter. The deadline for application to take the CEBS January 1994 Examinations is Nov. 1, 1993. Further information regarding these examinations and fees may be obtained from CEBS Registrations. See address and telephone number above.

Note: All CEBS courses have been approved by the Commissioner of Commerce for insurance continuing education credit. **CEBS courses may be taken A-F or S-N.**

CEBS 0001C (I) EMPLOYEE BENEFITS CONCEPTS AND MEDICAL CARE BENEFITS. 4 certificate credits, tuition*: \$280.

Begins with an overview of the environment of employee benefit plans and covers hospital plans, surgical/medical expense plans, major medical plans, dental and vision care, and health care cost containment techniques. The new and/or expanded topics in the revised course include managed care, long-term care, health maintenance organization (HMOs), preferred provider organizations (PPOs), and retiree medical benefits. (No prereq)

Fall Spec Term, Sec 1, W, 6:30-9, Sept. 29-Dec. 15, 1993, EE/CSci 2260, Lutes, Pechacek. *No late fee through Sept. 22*

CEBS 0002C (II) DESIGN AND ADMINISTRATION OF LIFE, DISABILITY INCOME, AND OTHER WELFARE BENEFIT PLANS. 4 certificate credits, tuition*: \$280.

Covers the group insurance mechanism, life insurance benefits, short- and long-term disability income, employee-assistance programs, and dependent care arrangements. Also includes expanded coverage of death benefits and public sector disability income benefits, flexible benefits, flexible spending accounts, as well as new subject areas such as family leave, unemployment benefits, employee discounts, educational benefits, credit unions, and management topics. (No prereq)

Winter Spec Term, Sec 1, M, 6:30-9, Mar. 14-June 6, 1994, EE/CSci 2260, Lutes, Pechacek. *No late fee through Mar. 7*

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

CEBS 0003C (III) RETIREMENT PLANS: BASIC FEATURES AND DEFINED CONTRIBUTION APPROACHES. 4 certificate credits, tuition*: \$280.

After a historical introduction of private pension plan development, this course reviews the objectives of benefit plan design. It provides an analysis of the differences between defined benefit and defined contribution plans and gives an overview of the legal requirements (tax and non-tax) that must be satisfied by qualified retirement plans. It explains defined contribution plans: money purchase, profit sharing, thrift and savings, employee stock ownership plans (ESOPs), 401(k) plans, and simplified employee pensions (SEPs). Also included are individual approaches to retirement plan design: IRAs, Keogh plans, and 403(b) annuities for the non-profit sector. (No prereq)
Fall Spec Term, Sec 1, T, 6:30-9, Sept. 28-Dec 14, 1993, EE/CSci 2260, Lewis. *No late fee through Sept. 21*

CEBS 0004C (IV) RETIREMENT PLANS: DEFINED BENEFIT APPROACHES AND PLAN ADMINISTRATION. 4 certificate credits, tuition*: \$280.

After an overview of the retirement aspects of Social Security, defined benefit features are analyzed, and hybrid approaches (cash balance and target benefit plans) are discussed. Other topics are actuarial and accounting aspects of defined benefit plan sponsorship, basic concepts of investing pension assets, a comparison of the trust fund approach with the insured approach to plan funding, the implications of the plan termination insurance program of the Pension Benefit Guaranty Corporation (PBGC) for both terminating and ongoing sponsors and their employees, the taxation of retirement benefits, and nonqualified approaches to providing retirement income. (No prereq)

Winter Spec Term, Sec 1, T, 6:30-9, Mar. 15-May 31, 1994, EE/CSci 2260, Lewis. *No late fee through Mar. 8*

CEBS 0005C (V) CONTEMPORARY LEGAL ENVIRONMENT OF EMPLOYEE BENEFIT PLANS. 4 certificate credits, tuition*: \$280.

Covers the legal system and basic legal rights and responsibilities. It provides a general understanding of the legal environment, focusing on those legal concepts and principles of significance in employee benefit planning and administration. (No prereq)

Fall Spec Term, Sec 1, Th, 6:30-9, Sept. 30-Dec. 16, 1993, EE/CSci 2260. *No late fee through Sept. 23*

CEBS 0006C (VI) ACCOUNTING AND FINANCE. 4 certificate credits, tuition*: \$280.

Places emphasis on the financial and accounting

concepts essential in the administration of employee benefit plans. The role of accounting as a system of communicating information to users inside and outside an organization is discussed. Concepts, principles, and techniques of financial management are a major part of this course. (No prereq)

Fall Spec Term, Sec 1, M, 6:30-9, Sept. 27-Dec. 13, 1993, EE/CSci 2260. *No late fee through Sept. 20*

CEBS 0007C (VII) ASSET MANAGEMENT. 4 certificate credits, tuition*: \$280.

Focuses on asset management in the context of the investment of pension plan assets. Subjects covered include securities markets, stock and bond valuation and analysis, portfolio theory, investment policy, and federal securities regulation. (No prereq)

Winter Spec Term, Sec 1, Th, 6:30-9, Mar. 17-June 2, 1994, EE/CSci 2260. *No late fee through Mar. 9*

Information and Decision Sciences (IDSc)

(395 Humphrey Center: 624-8030)

Carlson School of Management

Textbooks for most Information and Decision Sciences courses are available at the Harold D. Smith bookstore on the West Bank campus (625-3000).

(See also Operations and Management Science)

- Carl Adams, Professor
- George Benson, Associate Professor
- Norm Chervany, Professor
- Shawn Curley, Associate Professor
- Gordon Davis, Professor
- George D'Elia, Associate Professor
- Gerardine DeSanctis, Associate Professor
- Gary Dickson, Professor
- Gretchen Donahue, Lecturer
- Gordon Everest, Associate Professor
- Jerry Fruin, Associate Professor, Agricultural and Applied Economics
- Dale Goodhue, Assistant Professor
- Thomas Hoffmann, Professor
- Nancy Johnson, Assistant Professor, Metropolitan State University
- Paul Johnson, Professor
- Douglas C. Lund, Lecturer and Coordinator
- Salvatore T. March, Professor
- J. David Naumann, Associate Professor
- Craig Seitel, Inst. Analyst, Allison-Williams, Investment Bankers
- Robert Van Cleave, Lecturer and Coordinator, MBA Program
- Les Wanninger, Lecturer and Coordinator, Extension Classes
- James Wetherbe, Professor

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Courses in the IDSc area make up a program designed for students with a variety of backgrounds:

1. Undergraduates in the Carlson School or other schools who want one or more IDSc courses as electives
2. Working students who want IDSc electives or an information technology-focused emphasis program as part of their mid-career education, but who are not necessarily working toward a degree
3. Undergraduate Carlson School business majors who want to focus on information technology in a self-designed emphasis program as part of their Carlson School B.S.B. degree

Starting Points

Students who have been accepted into, or who plan to apply to the Carlson School, should begin with the Core Courses of IDSc 1010, OMS 1020, and IDSc 3030. IDSc 3030 is a requirement for Carlson School students as part of the B.S.B. program. IDSc 3030 is required prior to taking the other 3xxx and 5xxx courses below. That requirement may be waived by the IDSc Extension coordinator (Les Wanninger, 624-8030) for those students who have equivalent experience.

Core Courses

This sequence of three courses (IDSc 1010, OMS 1020, IDSc 3030) is intended to help students develop the capability to acquire, analyze, and manage data as business professionals. The courses are a mix of skill development and general knowledge in information technology.

Undergraduate Core

Beginning with admission for Fall Qtr 1988, several lower division and upper division IDSc and OMS (formerly Department of Management Sciences) class changes were implemented by the Carlson School of Management. If you are seeking admission to the Carlson School and you have taken DSci 1050, MIS 3100 and/or MIS 3101, please contact a CEE adviser in 314 Nolte Center, or call 625-2500 for information.

Carlson School of Management degree students must take upper division (3xxx-5xxx) IDSc courses A-F.

Note: Students taking Carlson School of Management upper division undergraduate courses through CEE are expected to have completed the equivalent of 90 quarter college credits with a minimum of a "B-" grade average.

IDSc 1010 (formerly MSci 1010) FUNDAMENTALS OF INFORMATION DEVELOPMENT AND USE. 4 credits, §MSci 1010, tuition* (includes \$16 special fee): Resident \$296; Non-resident \$828. (IS)

Meeting information needs of managers. Sources of data, data collection methods, data organization and presentation. Descriptive statistical analysis methods for populations and processes. Lab instruction to provide intermediate level skill development in word processing and spreadsheet analysis on personal computers. **Must be taken A-F. Students are expected to have a basic understanding of word processing (WordPerfect) and spreadsheet analysis (Lotus) before registering for this course. In addition to tuition and special fee, students are required to purchase a computer access card. Registered students may purchase this card at any Bursar's Office; the West Bank Bursar's Office is in Anderson Hall (8 a.m.-3:30 p.m.), telephone 625-1383. The fee also may be paid at the Extension Classes Registration Office in 101 Wesbrook Hall. That office is open until 8 p.m. most evenings Monday through Thursday early each quarter. When the office is not open in the evening, cards are available at the Information Desk in 101 Wesbrook Hall. Limits are strictly enforced due to facility limitations. No permission to register will be given when a section closes. (Prereq 30 credits, Math 1111 or ¶1111. Limited to 45)**

Fall Qtr, ★Sec 1 Lect, M, 5:30-8:15, BlegH 125; Lab, T, 5:30-6:30, BlegH 90**

Fall Qtr, ★Sec 2, Lect, T, 5:30-8:15, ClaOff B35, StP Campus (Limit 36); Lab, W, 5:30-6:30, ClaOff 135, StP Campus**

Fall Qtr, ★Sec 3, Lect, W, 5:30-8:15, BlegH 125; Lab, Th, 5:30-6:30, BlegH 90**

Winter Qtr, ★Sec 4, Lect, M, 5:30-8:15, BlegH 130; Lab, T, 5:30-6:30, BlegH 90**

Winter Qtr, ★Sec 5, Lect, W, 5:30-8:15, BlegH 130; Lab, Th—5:30-6:30, BlegH 90**

Spring Qtr, ★Sec 6, Lect, M, 5:30-8:15, BlegH 125; Lab, T—5:30-6:30, BlegH 90**;

Spring Qtr, ★Sec 7, Lect, T, 5:30-8:15, ClaOff B35, StP Campus (Limit 36); Lab, W, 5:30-6:30, ClaOff 135, StP Campus**

Spring Qtr, ★Sec 8, Lect, W, 5:30-8:15, BlegH 125; Lab, Th—5:30-6:30, BlegH 90**

** Students should be sure to attend the first lab for their section even if it occurs prior to the first lecture (due to the start of the quarter)

OMS 1020 DATA ANALYSIS AND STATISTICAL INFERENCE FOR MANAGERS. See page 283.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

IDSc 3030 (formerly MSci 3030) INFORMATION SYSTEMS AND INFORMATION MANAGEMENT. 4 credits, §MSci 3030, §IDSc 3002, §MIS 3100, 5100, 3101, 3300, 5101, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Defining information requirements. Developing information systems applications. Using information systems. Defining data structures and building and using databases. Formulating database retrievals. Building and using models and expert systems to support decision making. Obtaining external data to support model building and decision making. Evaluating information. Skill development in database software. This course is equivalent to MIS 3100, 5100, 3101, 3300, and 5101. **Limits are strictly enforced due to facility limitations. No permission to register will be given when a section closes. Must be taken A-F.** (Prereq IDSc 1010 and OMS 1020. Limited to 30)

Fall Qtr, ★Sec 1, T, 5:30-9, HHHCtr 35

Fall Qtr, ★Sec 2, W, 5:30-9, HHHCtr 35

Winter Qtr, ★Sec 3, T, 5:30-9, HHHCtr 35

Winter Qtr, ★Sec 4, Th, 5:30-9, HHHCtr 35

Spring Qtr, ★Sec 5, T, 5:30-9, HHHCtr 35

Spring Qtr, ★Sec 6, W, 5:30-9, HHHCtr 35

Computing Software Courses

The use of computing software is fundamental to many courses in the Carlson School of Management. To acquire these skills, the following courses are available.

IDSc 1070 (formerly MIS 1070) ORIENTATION TO COMPUTER SOFTWARE AND PROGRAMMING. 1 credit, §IDSc 1010, 3030, 3002, §MIS 1070, MIS 3300, or MSci 1010, tuition* (includes \$50 special fee): Resident \$120; Non-resident \$253.

Intended for persons seeking to learn to use computer software and program computer applications for business. Provides instruction on software alternatives and how to use software effectively. **Must be taken S-N.** (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, Th, 5:30-6:30, HHHCtr 35

IDSc 1075 (formerly MIS 1075) COBOL. 2 credits, §MIS 1075, 3098, tuition* (includes \$50 special fee): Resident \$190; Non-resident \$456.

Introduction to the programming language COBOL, a widely used business data processing language. Through lecture, in-class exercises, assignments, and exams, students learn the basics of COBOL program design, coding, testing, and debugging. **Must be taken S-N.** (No prereq. Limited to 28)

Fall Qtr, ★Sec 1, Th, 6:45-8:45, HHHCtr 35

IDSc 3132 (formerly MIS 3132) DATA COMMUNICATIONS SYSTEMS. 4 credits, §MIS 3132, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Characteristics of transmission facilities and networks, concentrators and multiplexors, terminals, modems and front-end processors. Control hardware and software systems. The role of data communications in management information systems. *Open to nondegree students with equivalent experience.* (Prereq 5102 or MIS 5102 and at least 90 credits completed or in progress. Limited to 30)

Winter Qtr, Sec 1, T, 5:30-9, BlegH 210, Naumann

IDSc 3990 TOPICS: BUSINESS COMPUTING LITERACY. 4 credits, tuition* (includes \$50 special fee): Resident \$380; Non-resident \$1007.

Combines the skills topics of database, spreadsheet, word processing, graphics, desktop publishing, desktop organizers, and data access. Focus is on the personal business use of these software and hardware tools. Use is made of meaningful functional area applications as problems to solve with these tools. End user computing topics such as model validation, data security, viruses, and backup are included. *Students concerned with the level of experience required for this course should consult with the instructor.*

Limits are strictly enforced due to facility limitations. No permission to register will be given when a section closes. (Prereq IDSc 1070 or 1010 or equivalent experience. Limited to 28)

Winter Qtr, ★Sec 1, M, 5:30-9, HHHCtr 35, Lund

IDSc 5102 (formerly MIS 5102) INTRODUCTION TO INFORMATION SYSTEMS ANALYSIS. 4 credits, §MIS 5102, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

The phases within the systems life cycle for development of an information system application. Emphasis on the standards, tools and techniques required in the analysis of information requirements and in logical design. Processing alternatives and alternative approaches to systems design. *Open to nondegree students with equivalent experience.* (Prereq 3030 or 3001 or 3002 and at least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota. Credits may not be applied to MBA programs begun after Dec. 15, 1979. Limited to 30)

Fall Qtr, ★Sec 1, T, 5:30-9, BlegH 210, Naumann

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

IDSc 5103 DATABASE DESIGN, MANIPULATION, AND MANAGEMENT. 4 credits, tuition* (includes \$16 special fee); Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

Use of computer technology and software to represent, manipulate, and manage data. For users of databases and DBMS. Facilities for ad hoc interactive use and system development. Principles and techniques of logical database design. Introduction to physical representation and storage of data in a computer system. Database management system (DBMS) tools to manage data and high-level languages to retrieve and manipulate data. (Prereq IDSc 3030 or IDSc 3001 or 3002. Qualified students may register for graduate credit at the University of Minnesota. Credits may not be applied to the MBA program. Limited to 30)

Winter Qtr, ★Sec 1, W, 5:30-9, BlegH 245, Everest

IDSc 5410 DECISION SUPPORT SYSTEMS. 4 credits, tuition* (includes \$16 special fee); Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

Overview of technical and organizational aspects of decision support systems. Management of DSS within the end-user computing environment. Conceptual foundations of DSS, DSS software reviews, and case examples. *Open to nondegree students with equivalent experience.* (Prereq 3030 or MSci 3030 or MBA 8025 or equivalent or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Winter Qtr, ★Sec 1, T, 5:30-9, BlegH 335

IDSc 5430 (formerly 3131) ADVANCED DATABASE DESIGN AND ADMINISTRATION. 4 credits, \$8430, tuition* (includes \$16 special fee); Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

Perspective of data administrator serving the users of information and DBMS. Role, organization, functions, and tools of data administration. Data planning and information architectures. Advanced logical database design. Advanced database manipulation with high-level languages and natural languages. Object-oriented DBMS and support for graphics and CAD/CAM applications. Data security, maintaining database integrity, and managing data in a shared, networking, or distributed environment. Strategies

for using advanced DBMS tools in systems development and operations. *Open to nondegree students with equivalent experience. Credits may not be applied to the Carlson School of Management MBA program.* (Prereq 5103. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Spring Qtr, ★Sec 1, Th, 5:30-9, BlegH 115, Everest

APEX (Academy Practitioner Exchange) Project. 4 credits (may be repeated for credit).

A special program designed to provide a productive interaction between faculty and practitioners who are interested in developing the frontiers of knowledge and practice. Opportunity to study special topics in Information and Decision Sciences in depth. Participative inquiry formats address current interests. Designed to sharpen concept and practice. Interaction with faculty, practitioners, and resource person in team settings. (Prereq minimum of two years of managerial experience. Qualified students may register for graduate credit at the University of Minnesota)

For further information about the courses listed below, contact the course coordinator at (612) 624-8030. Course sites to be announced.

IDSc 5998 SPECIAL TOPICS: APEX PROGRAM: Imaging Technology. 4 credits, tuition* (includes \$450 special fee); Resident \$780; Non-resident \$1407; Resident Graduate credit \$846; Non-resident Graduate credit \$1242; Resident Graduate School credit \$1134; Non-resident Graduate School credit \$1818.

Imaging is one of the key emerging computing technologies of the '90s. This is a research course that works with the Minnesota Imaging Project in examining imaging from the perspective of how it can be used strategically in pursuit of organizational objectives. An investigation of specific imaging applications, with particular focus on understanding benefits derived, issues and limitations, and changes in work processes. Includes hands-on experience with a laboratory imaging system. *Enrollment is by permission of instructor. Call 624-1874 for a complete description and to discuss your participation.* (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Fall Qtr, ★Sec 2, M, 5:30-9, Arr, Wanninger

Winter Qtr, ★Sec 3, M, 5:30-9, Arr, Wanninger

Spring Qtr, ★Sec 4, M, 5:30-9, Arr, Wanninger

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

IDSc 5998 SPECIAL TOPICS: APEX PROGRAM: CASE Technology. 4 credits, tuition* (includes \$450 special fee): Resident \$780; Non-resident \$1407; Resident Graduate credit \$846; Non-resident Graduate credit \$1242; Resident Graduate School credit \$1134; Non-resident Graduate School credit \$1818.

Imaging is one of the key emerging

CASE (Computer Assisted Software Engineering) is one of the fastest growing attempts to use computing technology in support of development of computing applications. It offers significant potential, but is not short of its own issues and limitations. This APEX program investigates CASE practice and relates that to what has been learned about applying other technology. A variety of teaching methods are used, including site visits, literature summary, lecture, case discussions, and group research. *Enrollment is by permission of the instructor, Gordon Everest, because of the developmental and research nature of the project, and the expectation that all project members will contribute as well. Call 624-1874 for a complete description and to discuss your participation.* (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30) Winter Qtr, ★Sec 5, Th, 6-9:30, Law 1, Everest

IDSc 5998 SPECIAL TOPICS: APEX PROGRAM: Multimedia. 4 credits, tuition* (includes \$450 special fee): Resident \$780; Non-resident \$1407; Resident Graduate credit \$846; Non-resident Graduate credit \$1242; Resident Graduate School credit \$1134; Non-resident Graduate School credit \$1818.

Imaging is one of the key emerging

Multimedia is the use of combinations of data, text, pictures, sound, animation, and graphics on a computer system. In essence then, the application of multimedia technologies involves the integration, introduction, and infusion of new technologies into new applications in an environment of changing jobs, roles, and requirements. Individuals who may be classified as innovators and early adopters will likely lead the introduction of multimedia technologies. However, development of a supporting infrastructure of people and technology will be necessary for multimedia use to expand beyond a few innovators to widespread use. This research course will examine multimedia from the perspective of how it can be used strategically in pursuit of organizational objectives. Class participants will investigate a variety of multimedia applications, the capabilities that are used, benefits that are derived, and issues and limitations. Implementation issues will include defining a supporting infrastructure, managing change, legal issues, changes brought about by the technology, and project definition and management. Students will have ac-

cess to the multimedia lab. *Enrollment is by permission of the instructor. Call 624-1874 for a complete description and to discuss your participation.* (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30) Spring Qtr, ★Sec 6, Th, 5:30-9, Arr, Wanninger

Institute of Languages and Literatures

(105 Folwell Hall: 624-3331)

College of Liberal Arts

Textbooks for most courses offered through the Institute of Languages and Literatures on the East Bank campus are available at the Minnesota Book Center in Williamson Hall (625-6000); courses offered on the West Bank campus are at the Harold D. Smith Bookstore (625-3000); and those offered on the St. Paul campus are at Books Underground (624-9200).

Teirab AshShareef, Assistant Professor of Afro-American and Middle Eastern Languages and Cultures

Amalendu Chakrabarty, Lecturer in South Asian Languages and Cultures

Bruce T. Downing, Associate Professor of Linguistics
Gary Jahn, Associate Professor of Slavic Languages and Literatures

Indira Junghare, Professor of South Asian Languages and Cultures

William Malandra, Associate Professor of Classical and Near Eastern Studies and South Asian Studies

Leonard A. Polakiewicz, Associate Professor of Slavic Languages and Literatures

Ivancica Schrunk, Lecturer in Slavic Languages and Literatures

Nancy J. Stenson, Associate Professor of Linguistics
Loren Tesdell, Lecturer in History and Middle Eastern Studies

For information about study abroad opportunities, read about the Global Campus on page 466.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in courses offered through the Institute of Languages and Literatures. For a copy of the current daytime *Class Schedule* and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

East Asian Languages and Literatures

Study in China—Students can spend the summer studying the Chinese language at Nankai University in China. For information, call the Global Campus at 626-7134.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Chinese (Chn)

Chn 1011-1012-1013 BEGINNING CHINESE. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015.

Sections held in Rarig Center are offered via interactive television between two sites, with students at both locations. Reading, writing, and speaking Chinese. Completion of 1013 prepares students for 3021. *Sections will be offered only if there is sufficient enrollment of 10 or more students each quarter.* (No prereq for 1011; 1011 or 1006 or # for 1012; 1012 or 1007 or # for 1013. Limited to 20)

Fall Qtr, 1011, ★Sec 1, MW, 6:20-8:50, FolH 214

Fall Qtr, 1011, ★Sec 2, MW, 6:20-8:50, RarigC
Fifth floor Studio C

Winter Qtr, 1012, ★Sec 1, MW, 6:20-8:50, FolH
344

Winter Qtr, 1012, ★Sec 2, MW, 6:20-8:50, RarigC
Fifth floor Studio C

Spring Qtr, 1013, ★Sec 1, MW, 6:20-8:50, FolH
344

Spring Qtr, 1013, ★Sec 2, MW, 6:20-8:50, RarigC
Fifth floor Studio C

Chn 3021-3022-3023 INTERMEDIATE MODERN CHINESE. 5 credits each quarter, tuition* each quarter: Resident \$367.50; Non-resident \$1065.75

Modern standard Chinese, expanded through conversation and reading. 3022 and 3023 will be offered only if there is sufficient enrollment in 3021. *Sections will be offered only if there is sufficient enrollment of 10 or more students each quarter.* (Prereq 1013 or 1008 or # for 3021; 3021 or # for 3022; 3022 or # for 3023. Limited to 20)

Fall Qtr, 3021, ★Sec 1, MW, 6:20-8:50, FolH 419

Winter Qtr, 3022, ★Sec 1, MW, 6:20-8:50, FolH 142

Spring Qtr, 3023, ★Sec 1, MW, 6:20-8:50, FolH 426

Chn 3161 CHINESE POETRY IN ENGLISH TRANSLATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Major poets examined in context of their intellectual, social, and aesthetic traditions. Knowledge of Chinese not required. *Section will be offered only if there is sufficient enrollment of 10 or more students.* (No prereq)

Winter Qtr, Sec 1, T, 6:20-8:50, FolH 142

Chn 3162 CHINESE FICTION IN ENGLISH TRANSLATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Chinese narrative prose, 1200 to 1900. Intellectual, social, and aesthetic traditions. Knowledge of Chinese not required. *Section will be offered only if there is sufficient enrollment of 10 or more students.* (No prereq)

Spring Qtr, Sec 1, T, 6:20-8:50, FolH 142

East Asian Languages and Literatures (EALL)

No EALL courses offered 1993-94

Japanese (Jpn)

Jpn 1011-1012-1013 BEGINNING JAPANESE. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015.

Reading, writing, and speaking Japanese. Completion of 1013 prepares students for 3021. *Sections will be offered only if there is sufficient enrollment of 10 or more students each quarter.* (No prereq for 1011; 1011 or 1006 or # for 1012; 1012 or 1007 or # for 1013. Limited to 20)

Fall Qtr, 1011, ★Sec 1, MW, 6:20-8:50, FolH 326

Winter Qtr, 1012, ★Sec 1, MW, 6:20-8:50, FolH
246

Spring Qtr, 1013, ★Sec 1, MW, 6:20-8:50, FolH
246

Jpn 3021-3022-3023 INTERMEDIATE JAPANESE. 5 credits each quarter, tuition* each quarter: Resident \$367.50; Non-resident \$1065.75

Foundation for reading Knowledge of Japanese. Review and pattern drill. *Sections will be offered only if there is sufficient enrollment of 10 or more students each quarter.* (Prereq 1013 or 1008 or # for 3021; 3021 or # for 3022; 3022 or # for 3023. Limited to 20)

Fall Qtr, 3021, ★Sec 1, MW, 6:20-8:50, FolH 138

Winter Qtr, 3022, ★Sec 1, MW, 6:20-8:50, FolH
240

Spring Qtr, 3023, ★Sec 1, MW, 6:20-8:50, FolH
240

Jpn 3031-3032-3033 THIRD-YEAR JAPANESE. 5 credits each quarter, tuition* each quarter: Resident \$367.50; Non-resident \$1065.75

Hearing, speaking, and writing Japanese. Development of reading proficiency in modern Japanese prose and poetry. Formal written Japanese. *Sections will be offered only if there is sufficient enrollment of 10 or more students each quarter.* (Prereq 3023 or # for 3031; 3031 or # for 3032; 3032 or # for 3033. Limited to 20)

Fall Qtr, 3031, ★Sec 1, TTh, 6:20-8:50, FolH 116

Winter Qtr, 3032, ★Sec 1, TTh, 6:20-8:50, FolH
104

Spring Qtr, 3033, ★Sec 1, TTh, 6:20-8:50, FolH
246

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Korean (Kor)

Kor 1011-1012-1013 BEGINNING KOREAN. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015.

Reading, writing, and speaking Korean. 1012 and 1013 will be offered only if there is sufficient enrollment continued from 1011. *Sections will be offered only if there is sufficient enrollment of 10 or more students each quarter.* (No prereq for 1011; 1011 or # for 1012; 1012 or # for 1013. Limited to 20)

Fall Qtr, 1011, ★Sec 1, TTh, 6:20-8:50, AmundH 104, 158

Winter Qtr, 1012, ★Sec 1, TTh, 6:20-8:50, AmundH 104, 158

Spring Qtr, 1013, ★Sec 1, TTh, 6:20-8:50, AmundH 104, 158

Kor 3021-3022-3023, Intermediate Korean, tentatively scheduled for 1994-95

Language, Teaching, and Technology (LgTT)

LgTT 5101 TECHNOLOGY IN THE LANGUAGE CLASSROOM. 2 credits, tuition*: Resident \$147; Non-resident \$426.30; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Uses of technology in language teaching. Theoretical background, application, and demonstration. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Fall Qtr, ★Sec 1, W, 4:15-6, FolH 218, Stenson

Linguistics (Ling)

(See also English as a Second Language; Interdepartmental Study; Engl 3851, The English Language; and CSch 0296 Ethnic Identity and Linguistic Variation)

Ling 1005 LANGUAGE AND SOCIETY. 4 credits, tuition*: Resident \$280; Non-resident \$812.

The role of language in human social interaction; linguistic indicators of social status and attitudes; language and sex roles; linguistic ecology; language planning for multilingual communities; implications for educational and public policy. (No prereq)

Fall Qtr, Sec 1, T, 6:20-8:50, KoltH S136

Spring Qtr, Sec 2, T, 6:20-8:50, KoltH S136

Ling 3001 INTRODUCTION TO LINGUISTICS. 5 credits, \$3005, 5001, tuition*: Resident \$367.50; Non-resident \$1065.75.

Systematic survey of phonetics, phonology, morphology, syntax, semantics, and historical-comparative linguistics; language learning and psychology of language; linguistic universals; language in society. (No prereq. Sec 1, 3, 4 meet concurrently with 5001)

Fall Qtr, Sec 1, T, 6:20-9:35, Arch 55

Fall Qtr, Sec 2, W, 6:20-9:35, Arch 40

Winter Qtr, Sec 3, T, 6:20-9:35, Arch 30

Spring Qtr, Sec 4, T, 6:20-9:35, Arch 35

Ling 5001 INTRODUCTION TO LINGUISTICS. 5 credits, \$3001, 3005, tuition*: Resident \$367.50; Non-resident \$1065.75; Resident Graduate credit \$495; Non-resident Graduate credit \$990; Resident Graduate School credit \$855; Non-resident Graduate School credit \$1710.

See course description for Ling 3001. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3001, sec 1, 3, 4)

Fall Qtr, Sec 1, T, 6:20-9:35, Arch 55

Winter Qtr, Sec 2, T, 6:20-9:35, Arch 30

Spring Qtr, Sec 3, T, 6:20-9:35, Arch 35

Slavic and Central Asian Languages and Literatures

Croatian and Serbian Language (CrSr)

CrSr 1101-1102-1103 BEGINNING CROATIAN AND SERBIAN LANGUAGE. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015.

Developing effective speaking, reading, and writing skills while widening the student's knowledge of the cultural context. *Sections will be offered only if there is sufficient enrollment of 10 or more students each quarter.* (Prereq 1101 or # for 1102; 1102 or # for 1103)

Fall Qtr, 1101, Sec 1, T, 6:10-9:30, FolH 114, Schrunk

Winter Qtr, 1102, Sec 1, T, 6:10-9:30, FolH 116, Schrunk

Spring Qtr, 1103, Sec 1, T, 6:10-9:30, FolH 234, Schrunk

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

CrSr 1104-1105-1106 INTERMEDIATE CROATIAN AND SERBIAN LANGUAGE. 4 credits each quarter, tuition* each quarter: Resident \$280; Non-resident \$812.

Building effective communication skills (speaking and writing) and reading capability in Serbo-Croatian while widening the student's knowledge of the cultural context. *Sections will be offered only if there is sufficient enrollment of 10 or more students each quarter.* (Prereq 1103 or # for 1104; 1104 or # for 1105; 1105 or # for 1106)

Fall Qtr, 1104, Sec 1, Th, 6:20-8:50, FolH 142, Schrunk

Winter Qtr, 1105, Sec 1, Th, 6:20-8:50, FolH 142, Schrunk

Spring Qtr, 1106, Sec 1, Th, 6:20-8:50, FolH 142, Schrunk

Polish (Plsh)

Study in Poland—Beginning Polish language courses from Polish instructors are offered in the Polish in Lublin program. For information, call the Global Campus at 625-3379.

No Polish courses offered through Extension Classes 1993-94

Russian (Russ)

Study in Russia—Students interested in intermediate and advanced Russian language and culture can earn credit during spring quarter in St. Petersburg. For information, call the Global Campus at 625-3379.

Russ 1101-1102-1103 BEGINNING RUSSIAN. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015. (IS)

Grammar, pronunciation, reading, and practice in speaking. **Note:** *All students should register in Sec 1 fall quarter; sec 1 winter quarter; and sec 1 spring quarter. Assignments to other sections will be made as necessary, and section and building/room noted on the student's registration receipt.* (No prereq for 1101; 1101 or # for 1102; 1102 or # for 1103. Limited to 20)

Fall Qtr, 1101, ★Sec 1, M, 6:10-9:30, FolH 312

Fall Qtr, 1101, ★Sec 2, M, 6:10-9:30, FolH 246

Fall Qtr, 1101, ★Sec 3, M, 6:10-9:30, FolH 240

Winter Qtr, 1102, ★Sec 1, M, 6:10-9:30, FolH 312

Winter Qtr, 1102, ★Sec 2, M, 6:10-9:30, FolH 326

Spring Qtr 1103, ★Sec 1, M, 6:10-9:30, FolH 114

Spring Qtr, 1103, ★Sec 2, M, 6:10-9:30, FolH 318

Russ 1104-1105-1106 INTERMEDIATE RUSSIAN. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015.

Expansion of experience in speaking, reading, and understanding Russian; reading contemporary texts. (Prereq 1103 or equivalent for 1104; 1104 or equivalent for 1105; 1105 or equivalent for 1106. Limited to 20)

Fall Qtr, 1104, ★Sec 1, T, 6:10-9:30, FolH 234, Jahn

Winter Qtr, 1105, ★Sec 1, T, 6:10-9:30, FolH 312, Jahn

Spring Qtr, 1106, ★Sec 1, T, 6:10-9:30, FolH 208, Polakiewicz

Russ 1304 INTRODUCTION TO LITERATURE: 19TH-CENTURY RUSSIAN FICTION. 4 credits, tuition*: Resident \$280; Non-resident \$812.

An introduction to the study of literature based upon materials drawn from Russian literature prior to the Soviet period. (No prereq)

Spring Qtr, Sec 1, W, 6:20-8:50, FolH 318, Jahn

Serbian (Serb)

No Serbian courses offered through Extension Classes 1993-94; Croation and Serbian Language courses are offered above with the CrSr designator.

Slavic (Slav)

Slav 3511 SOUTHEAST EUROPE: SLAVIC CULTURAL DIVERSITY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Understanding the roots of cultural and ethnic diversity among the Slavic peoples; the study of the processes which shaped it from the beginnings to the present. *Section will be offered only if there is sufficient enrollment of 10 or more students.* (No prereq)

Winter Qtr, Sec 1, Th, 6:20-8:50, FolH 114, Schrunk

South Asian and Middle Eastern Languages and Cultures

Marathi (Mar)

No Mar courses offered 1993-94

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Middle Eastern Languages and Cultures (MELC)

MELC 1536 THE RELIGION OF ISLAM. 4 credits, §ReIS 1036, tuition*: Resident \$280; Non-resident \$812.

The rise of Islam in historical context; the role of Muhammad, Koran traditions; fundamentals and observances of the faith; sectarian movements; the spread of Islam into Asia, Africa, and America; reformist movements and current trends. (No prereq. Meets concurrently with ReIS 1036)

Winter Qtr, Sec 1, Th, 6:20-8:50, BlegH 205, Tesdell

MELC 3213 THE QUR'AN AS LITERATURE. 4 credits, §Arab 3213, §ReIS 3213, tuition*: Resident \$294; Non-resident \$852.60.

Texts and commentaries in translation. Knowledge of Arabic not required. (No prereq. Meets concurrently with Arab 3213, ReIS 3213. Limited to 10)

Spring Qtr, ★Sec 1, M, 4:15-7, BlegH 330, AshShareef

Persian (Per)

No Per courses offered 1993-94

South Asian Languages and Cultures (SALC)

Study Abroad Courses and Internships—A variety of courses an internships may be arranged through the Minnesota Studies in International Development (MSID) program. For more information, contact the Global Campus, 106 Nicholson Hall, 626-2234.

SALC 1504 INTRODUCTION TO THE RELIGIONS OF SOUTH ASIA. 4 credits, §ReIS 1031, tuition*: Resident \$280; Non-resident \$812.

Introduction to Hinduism, Buddhism, and Jainism. (No prereq. Meets concurrently with ReIS 1031)

Winter Qtr, Sec 1, M, 6:20-8:50, FolH 104, Malandra

SALC 3412 HINDUISM. 4 credits, §SoAS 5412, §ReIS 3412, 5412, tuition*: Resident \$294; Non-resident \$852.60.

Development of Hinduism, focusing on sectarian trends, modern religious practices, myths and rituals, pilgrimage patterns and religious festivals, and the interrelationship of Indian social structure and Hinduism. (Prereq 3411 or ReIS 1031 or #; Meets concurrently with 5412 and ReIS 3412, 5412. Limited to 25)

Fall Qtr, ★Sec 1, W, 6:20-8:50, FolH 306, Junghare

SALC 3413 BUDDHISM. 4 credits, §5413, §ReIS 3413, 5413, tuition*: Resident \$294; Non-resident \$852.60.

Historical account of the Buddhist religion in terms of its rise, development, various schools, and common philosophical concepts. Focuses on Indian Buddhism, compares it with Hinduism, and discusses its demise and revival on the Indian subcontinent. (Prereq 3411 or ReIS 1031 or #. Meets concurrently with 5413 and ReIS 3413, 5413. Limited to 25)

Spring Qtr, ★Sec 1, W, 6:20-8:50, FolH 104, Junghare

SALC 3414 COMPARATIVE RELIGIONS OF SOUTH ASIA. 4 credits, §5414, §ReIS 3414, 5414, tuition*: Resident \$294; Non-resident \$852.60.

Compares and contrasts basic philosophical concepts, literatures, ideologies, and ritualistic practices of Hinduism, Buddhism, and Jainism with those of Islam and Sikhism. (No prereq. SALC 3412 or ReIS 3413 recommended. Meets concurrently with 5414 and ReIS 3414, 5414. Limited 25)

Winter Qtr, ★Sec 1, W, 6:20-8:50, FolH 208, Junghare

SALC 3521 GANDHI AND NON-VIOLENT REVOLUTION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Character of Gandhi, his influence over contemporaries, and his hold on the world today. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, M, 6:20-8:50, FolH 148, Chakrabarty

SALC 5412 HINDUISM. 4 credits, §3412, §ReIS 3412, 5412, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See description for SALC 3412. (Prereq 3411 or ReIS 1031 or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3412 and ReIS 3412, 5412. Limited to 10)

Fall Qtr, ★Sec 1, W, 6:20-8:50, FolH 306, Junghare

SALC 5413 BUDDHISM. 4 credits, §3413, §ReIS 3413, 5413, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See description for SALC 3413. (Prereq 3411 or ReIS 1031 or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3413 and ReIS 3413, 5413. Limited to 10)

Spring Qtr, ★Sec 1, W, 6:20-8:50, FolH 104, Junghare

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

SALC 5414 COMPARATIVE RELIGIONS OF SOUTH ASIA. 4 credits, §3414, §ReIS 3414, 5414, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See description for SALC 3414. (No prereq. SALC 3412 and 3413 recommended. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3414 and ReIS 3414, 5414. Limited to 10)

Winter Qtr, ★Sec 1, W, 6:20-8:50, FolH 208, Junghare

Turkish (Turk)

No Turkish courses offered through Extension Classes 1993-94.

Translation and Interpreting (TrIn)

(133 Klæber Court: 624-4055)

Curriculum in Translation and Interpreting—

Students who have developed strong skills in a language other than English can earn academic credit by completing a pre-professional program designed as preparation for employment in translation and interpreting. No major or minor is offered through this program, and the courses are presently available only through the Department of Extension Classes and the Summer Session. Instructional staff and course consultants will include certified interpreters, English language specialists, and bilingual tutors. Courses will be offered, contingent on sufficient enrollment, from time to time for persons bilingual in the following language pairs for which well qualified interpreters are in demand locally: Cambodian-English, Hmong-English, Lao-English, Russian-English, Spanish-English, and Vietnamese-English.

For information about the program, testing, registration, and scholarships call the Program in Translation and Interpreting at (612) 624-4055.

TrIn 3001 INTRODUCTION TO TRANSLATION. 3 credits, tuition*: Resident \$220.50; Non-resident \$639.45.

An introductory course in translation, oriented toward the translation of everyday documents of the sort that bilinguals working in the community are often asked to translate. Course includes both theory and supervised practice. As an exercise in re-expressing meaning in a second language, the course will be a good preliminary to training in interpreting. Open to any-

one with adequate skills in the languages included at each offering. Subject languages vary with each offering. (Prereq # and bilingual proficiency in English and another language spoken in Minnesota, e.g., Hmong, Vietnamese, Spanish, and Russian. Limited to 30)

Fall Qtr, ★Sec 1, W, 6:10-9, FolH 114, Downing

TrIn 3101 INTRODUCTION TO COMMUNITY INTERPRETING. 3 credits, tuition*: Resident \$220.50; Non-resident \$639.45.

A practical and theoretical introduction to interpreting in a variety of community settings. This course may serve bilingual individuals already functioning as nonprofessional interpreters while professionally employed in some other capacity, as well as persons already employed full or part time as interpreters without specific training, and others interested in future employment. An introduction to professional modes of interpreting and professional standards designed to enhance the skills of persons called upon to do interpreting. Subject languages vary with each offering. (Prereq #. TrIn 3001 recommended. High level of proficiency in spoken English and another language as demonstrated by examination. Limited to 25)

Winter Qtr, ★Sec 1, W, 6:10-9, FolH 426

Admission to TrIn 3101 (a prerequisite for all higher numbered courses in the sequence) is dependent on adequate scores on language proficiency tests in English and the other language in which training is desired. (Applicants may be exempted from testing in the native language.) These tests are given at scheduled times on an annual basis. (There is a testing fee of \$25.)

TrIn 3101 will be offered every winter quarter in Extension Classes. Enrollment will be limited to a maximum of four different language pairs in the course, e.g., Hmong-English, Spanish-English, Russian-English, and Cambodian-English. (Other languages for which there is a high demand for interpreters in the Twin Cities area, such as Vietnamese, Lao, and Amharic, may also be included from time to time as demand warrants.)

Planned future course offerings in the Program in Translation and Interpreting include:

- Health Care for Interpreters
- American Law for Interpreters
- Intermediate Interpreting I & II (Health Care Focus)
- Intermediate Interpreting I & II (Legal Focus)
- Interpreting Practicum

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Institute of Technology (IofT)

(106 Lind Hall: 624-5091)

The textbook for IofT 0001 is available at the first class meeting.

Allen J. Baldwin, Consulting Engineer
Russell K. Hobbie, Associate Dean, Institute of Technology

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in the Institute of Technology. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Information regarding the Engineer-in-Training Examination can be obtained by contacting the Board of Architecture, Engineering, Land Surveying and Landscape Architecture, Room 162, Metro Square, Seventh and Robert Streets, St. Paul, MN 55101 (296-2388) or by contacting the Institute of Technology Student Affairs Office, 106 Lind Hall (624-5091). Courses that review for the Advanced Professional Engineering exams are offered as CE 0005, EE 0001, and ME 0001C.

IofT 0001 FUNDAMENTALS OF ENGINEERING REVIEW. (E.I.T. REFRESHER). No credit, tuition*: \$210.

Particularly designed as a refresher course to help graduates of engineering colleges prepare for the Engineer-in-Training Examination, the first of two written examinations required for registration as a Professional Engineer. Covers a review of mathematics, chemistry, materials, statics, dynamics, strength of materials, thermodynamics, electric circuits, fluid mechanics, and engineering economics. **Must be taken S-N.** (Prereq bachelor's degree in engineering)

Fall Spec Term, Sec 1, TTh, 6:10-8:40, Sept.

21-Oct. 21, (10 meetings), Phys 166, Baldwin.

No late fee through Sept. 14

Winter Qtr, Sec 2, W, 6:10-8:40, Phys 133, Baldwin

Insurance and Risk Management

(Ins)

(537 Management/Economics: 624-2500)

Carlson School of Management

Textbooks for most Ins courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

Andrew F. Whitman, Professor
C. Arthur Williams, Professor Emeritus

Business degree students must take Insurance courses A-F.

Note: All Ins courses have been approved by the Commissioner of Commerce for insurance and real estate continuing education credit.

Note: Students taking Carlson School of Management upper division undergraduate courses through CEE are expected to have completed the equivalent of 90 quarter college credits with a minimum of a "B-" grade average.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Ins. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Ins 5100 RISK MANAGEMENT AND INSURANCE. 4 credits, \$3100, \$8100, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

How to recognize and evaluate the property, liability, and personnel risks facing a business firm, a family, or some other economic unit. The tools of risk management—mainly retention, loss control, and insurance—and the conditions under which they should be used. How to select and deal with an insurer. Public Policy issues—such as availability of insurance, insurance pricing, employee benefits, workers' compensation, automobile, professional and product injury/compensation systems, and social insurance. **May be taken S-N only by non-business degree students.** (Prereq at least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, T, 5:30-8:30, BlegH 225, Whitman
Spring Qtr, Sec 2, Th, 5:30-8:30, HHH Ctr 60, Whitman

Ins 5230 LIFE CONTINGENCIES I. 4 credits, \$Math 5057, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

The survival function; actuarial notation; actuarial present values of life insurance and life annuities. (Prereq Math 1211, 1221 plus 1231 or 1131 or #, one qtr in probability or statistics. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Math 5057. Limited to a combined total of 35)

Fall Qtr, ★Sec 1, MW, 6:10-7:40, VinH 207

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Interdepartmental Study (ID)

(225 Johnston Hall: 624-5701)

College of Liberal Arts

Beth Allen, Professor of Economics
Frederick M. Asher, Chair, Professor of Art History
Terence Ball, Professor of Political Science
Rose Brewer, Associate Professor, Afro-American Studies
Terence Cooper, Associate Professor of Soil Sciences
William Cunningham, Professor of Genetics and Cell Biology
Roger S. Jones, Associate Professor, Physics
Stephen Klein, Program Director, CLA Career Development
Paul T. Magee, Professor of Genetics and Cell Biology
Vernon W. Ruttan, Regents Professor of Agriculture and Applied Economics
Jo Ann Teschendorf, Assistant Counselor, CLA Career Development

ID 3334 GOETHE AND NEWTON: A STUDY IN SCIENCE AND BELIEF. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

An examination of the opposing ways in which Isaac Newton and Johann von Goethe reconciled their scientific researches with their spiritual beliefs. Newton, for the most part, judiciously separated his science from his occult interests, while Goethe effectively integrated the two. These two approaches are contrasted in class through a discussion of key ideas and writings, such as Goethe's theories of color and plant morphology and his novel *Elective Affinities*, and Newton's gravitational hypothesis and his writings on music and alchemy. The general cultural background of these works also will be explored in order to understand their historical roots and subsequent influences. The aims of the course are to articulate and understand alternative approaches to scientific and artistic creativity, and to gauge the role of spirituality in the life of the mind. (Prereq #. Limited to 30)

Spring Qtr, ★Sec 1, T, 6:20-8:50, Phys 157, Jones, Mishler

ID 3925 LIFE/CAREER PLANNING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Provides an opportunity for individuals of all ages and backgrounds to reassess their interests, values, skills, and formulate post-graduation plans. Acquaints the student with concepts of career development offering a systematic approach to lifelong career planning and career management. Content includes issues of career

selection, maximizing a university degree in the world of work, career-pathing, preparing an effective résumé, conducting a pro-active job search, interviewing practice, and coping with transition issues. Each student will develop an individualized career plan. *Non-journalism majors should register for Jour 3925. Journalism pre-majors and majors should register for this section. Must be taken S-N.* (Prereq CLA jr or sr; others by #. Meets concurrently with Jour 3925. Limited to a combined total of 25)

Winter Qtr, ★Sec 1, W, 6:20-8:50, MurH 308, Klein, Teschendorf

(See also PSch 0829, Career Decisions: Strategies for Change)

ID 5525-5526† GARBAGE, GOVERNMENT, AND THE GLOBE. 4 credits each quarter, tuition* each quarter: Resident \$294; Non-resident \$852.60.

Different topics covered each quarter. Students may register for one or two quarters. Call (612) 625-3898 for information as to when specific topics will be offered, and for availability of graduate credit. A rigorous analysis of how garbage affects not only the economy, politics, environment, and health, but also the lives of untold future generations of humans and other species. The problem of garbage does not lend itself to narrow disciplinary approaches, but calls for cooperation among many fields. Reflecting the need for boundary crossing, this course offers an interdisciplinary approach to learning about messy, real-world problems. Faculty from the Institute of Technology, the Carlson School of Management, and the Colleges of Agriculture, Biological Sciences, and Liberal Arts join students in examining topics such as the movement of toxic materials through the environment; the management of solid wastes, especially those generated by incinerators, power plants, and municipal water treatment plants; the philosophical grounding of environmental exploitation in the ethics of humanism; the physical, chemical, and biological aspects of soils in environmental planning and conservation decisions; and the effect of environmental problems on economic competitiveness and domestic and international corporate operations. The courses include lectures, exams, projects, films, and visiting speakers. (No prereq. Inquire about graduate credit at the time of registration. Limited to 50)

Winter Qtr, 5525, ★Sec 1, T, 6:20-8:50, GreenH 110, StP Campus

Spring Qtr, 5526, ★Sec 1, T, 6:20-8:50, GreenH 110, StP Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

ID 5615-5616-5617† WAYS OF KNOWING: SIX DISCIPLINES EXAMINED. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

How do biologists know what genes cause cancer? How do art historians decide where artistic styles originated? How do economists build models to predict market changes? Join a seminar with six faculty members drawn from such areas of the humanities as art history, from such sciences as genetics, and from the social sciences such as African-American studies. All six faculty meet together with the students each week for a full academic year to discover how these kinds of questions are examined in six very different disciplines. Become a biologist for five weeks, an African-American specialist for another five, and so on through the year. In Ways of Knowing, you will spend time learning how to think about different problems as if you were a scholar in each of the six disciplines, along with the other students, including the faculty. The purpose is to understand the similarities and differences among the various modes of inquiry represented in the course. **Students must enroll for all three quarters in order to receive any credit. Enrollment is by application only: Call 625-3898 or go to 202 Westbrook Hall.** (Prereq written # for 5615; 5615 for 5616; 5616 for 5617. Inquire about graduate credit when applying. Meets concurrently with arranged sections of AgEc 5990, ArtH 5950, Biol 5950, Econ 5960, and Soc 5970. Limited to 22)

Fall Qtr, 5615, ★Sec 1, T, 6:20-8:50, FordH 60
Winter Qtr, 5616, ★Sec 1, T, 6:20-8:50, FordH 60
Spring Qtr, 5617, ★Sec 1, T, 6:20-8:50, FordH 60

International Education

See page 466.

International Relations (IntR)

(248 Social Sciences: 624-9353)

College of Liberal Arts

Textbooks for most IntR courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also Political Science; Journalism and Mass Communication; The Compleat Scholar noncredit courses; and History)

Kinley Brauer, Professor
Karlyn Eckman, Graduate Teaching Assistant
Barbara Knudson, Professor
Mark Laffey, Graduate Teaching Assistant
Popie Mohring, Lecturer
August Nimtz, Associate Professor
Martin Sampson, Associate Professor

International Internships and Study Abroad—Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

IntR 3101 THEORETICAL APPROACHES TO INTERNATIONAL RELATIONS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Interdisciplinary study of international relations; contributions of various disciplines to the analysis of significant contemporary world problems. **Must be taken A-F.** (Prereq international relations major or #) Winter Qtr, Sec 1, T, 6:20-8:50, BlegH 150, Laffey

IntR 3900 TOPICS IN INTERNATIONAL RELATIONS: INTERNATIONAL COMMUNICATIONS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

A focus on intercultural communication theory. Intended for International Relations majors. The course looks at cultural variables that influence communication, intergroup and international communication. (No prereq)

Fall Qtr, Sec 1, M, 6:20-8:50, BlegH 260, Mohring
Spring Qtr, Sec 2, T, 6:20-8:50, HHCtr 30, Mohring

IntR 3900 TOPICS IN INTERNATIONAL RELATIONS: ENVIRONMENT AND DEVELOPMENT IN THE THIRD WORLD. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

A broad, introductory overview of the issues related to environmental degradation and economic development in the Third World. A review of current international policy and programming efforts to promote sustainable development and natural resource management. (No prereq. Limited to 90)

Fall Qtr, ★Sec 3, W, 6:20-8:50, AndH 210, Eckman

IntR 3900 TOPICS IN INTERNATIONAL RELATIONS: FOREIGN AID AND DEVELOPMENT ASSISTANCE PROGRAMS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Prepares students interested in working in Third World development projects by providing an overview of relevant development history, theory, and approaches to foreign aid, development project organization, impacts of foreign aid, and the structure and function of various types of development assistance organizations. (No prereq)

Winter Qtr, Sec 4, W, 6:20-8:50, BlegH 350, Eckman

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

IntR 3900 TOPICS IN INTERNATIONAL RELATIONS: THE ECOLOGY OF DEVELOPMENT. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Provides International Relations and other interested CLA students with a basic understanding of ecological processes and of contemporary global environmental problems and issues. (No prereq)

Spring Qtr, Sec 5, W, 6:20-8:50, HHH Ctr 60, Eckman

(See also CSch 0589, A Green Marshall Plan? Impact of U.S. Foreign Policy on the Global Environment)

IntR 3900 TOPICS IN INTERNATIONAL RELATIONS: INTERNATIONAL GOVERNANCE IN THE NEXT CENTURY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

1994 will be the United Nations 50th birthday. This course examines the historical, present, and future role of the United Nations in the international arena. Many critical issues will be addressed: the ever-changing peace scene, environmental degradation, and international governance. (No prereq)

Spring Qtr, Sec 6, T, 6:20-8:50, BlegH 225, Knudson

IntR 3981 INTERNATIONAL RELATIONS MAJOR PROJECT. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

International Relations majors who wish to begin and complete senior projects during the quarter. (Prereq international relations non-honors majors. Limited to 15)

Fall Qtr, ★Sec 1, T, 6:20-8:50, Law 1, Brauer

Winter Qtr, ★Sec 2, W, 6:20-8:50, AmundH 162, NimtZ

Spring Qtr, ★Sec 3, M, 6:20-8:50, SocSci 1383, Sampson

Islamic

(See Area Studies Programs, and the Institute of Languages and Literatures)

Italian (Ital)

(260 Folwell Hall: 624-4308)

College of Liberal Arts

Textbooks for most Ital courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also PSch 0981, Italian for Travelers)

Ronald Martinez, Associate Professor of Italian

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in Italian and French. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Read about language laboratories on page 51.

Continuing Education for Women (CEW) sections available in the following courses: Ital 1101, 1102, 1103

Ital 1101-1102-1103 BEGINNING ITALIAN. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015. (IS 1101)

Speaking, reading, and cultural objectives based on audiolingual approach. Students learn to understand and express fundamental ideas, to write anything they can say, and to master fundamental structures of the language. Includes audiovisual aids. (No prereq for 1101; 1101 or # for 1102; 1102 or # for 1103. Limited to 25)

Fall Qtr, 1101, ★Sec 1, MTh, 6:20-8:25, AkerH 211, 309 (Limit 75)

Fall Qtr, 1101, ★Sec 2, TTh, 9:10-11:15 a.m., MacP. Offered through Continuing Education for Women

Winter Qtr, 1102, ★Sec 1, MTh, 6:20-8:25, AmundH 120

Winter Qtr, 1102, ★Sec 2, TTh, 9:10-11:15 a.m., MacP. Offered through Continuing Education for Women

Spring Qtr, 1103, ★Sec 1, MTh, 6:20-8:25, KoltH S133

Spring Qtr, 1103, ★Sec 2, TTh, 9:10-11:15 a.m., MacP. Offered through Continuing Education for Women

Ital 1104 INTERMEDIATE ITALIAN. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Consolidation of basic structures and development of oral fluency through readings and discussions. (Prereq 1103 or equivalent. Limited to 25)

Fall Qtr, ★Sec 1, MTh, 6:20-8:25, FolH 426

Ital 1105 INTERMEDIATE ITALIAN. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Literary and cultural readings, leading to introductory knowledge of Italian literature and civilization. (Prereq 1104 or equivalent. Limited to 25)

Winter Qtr, ★Sec 1, MTh, 6:20-8:25, NichH 109

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Ital 1106 INTERMEDIATE ITALIAN. 5 credits, tuition*: Resident \$350; Non-resident \$1015. Further development of reading, writing, listening, and speaking skills through the study of contemporary Italian culture. (Prereq 1105 or equivalent. Limited to 25)

Spring Qtr, ★Sec 1, MTh, 6:20-8:25, AmundH 116

Ital 3015 INTERMEDIATE ITALIAN COMPOSITION AND CONVERSATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Conversation and composition practice to achieve command of Italian in speaking and writing. Conversation based on readings and discussions. (Prereq 1105 or 1104 with grade of A and recommendation of instructor)

Fall Qtr, Sec 1, T, 6:10-9:40, FoIH 426

FrIt 3604 CINEMAS OF THE REAL.

See French and Italian

Reading Italian

Ital 0001 is specifically designed for individuals who desire only a reading knowledge of the language. The Italian language requirements for a graduate degree may also be satisfied by successfully passing an examination given at the end of the course. Graduate students should check with their advisers for specific language requirements in their field of study.

Ital 0001 READING ITALIAN. No credit, tuition*: \$280.

This course is designed solely to impart a basic reading knowledge of the Italian language. At the end of one quarter the student may take a reading examination in Italian. The department will certify to the Graduate School a reading knowledge of Italian upon successful completion of the examination. **Must be taken S-N.** (No prereq)

Spring Qtr, Sec 1, W, 6:20-8:50, KolH S133

Japanese

(See Institute of Languages and Literatures)

Jewish Studies

(See Area Studies Program)

Journalism and Mass Communication (Jour)

(111 Murphy Hall: 625-9824)

College of Liberal Arts

Textbooks for most Jour courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also English; and The Compleat Scholar non-credit courses)

Stephen Klein, Program Director, CLA Career Development

Jo Ann Teschendorf, Assistant Counselor, CLA Career Development

Joint Day/Extension Classes—You may register through Extension for day school classes that do not require preregistration. You must have written permission from **both** the department and from the instructor in order to enroll in a Joint Day/Extension section. Joint Day/Extension classes are listed in the back of the daytime Class Schedule. For a copy of the current schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Classes Open to Non-Majors—The following classes are open to non-majors and do not require preregistration: *Jour 1001, Jour 3745, Jour 3796, Jour 3925, Jour 5251, Jour 5501, and Jour 5801.*

Journalism majors must have these 3xxx/5xxx courses approved on program plan. Pre-jour majors should not enroll in these 3xxx/5xxx courses.

Classes Requiring Preregistration—Classes that require preregistration are designed for majors, but non-majors may attend these courses if two conditions are met: (1) space is available, and (2) students have the instructor's permission.

Instructor permission is generally given if students have appropriate academic or professional background for the course. If you are a non-major and interested in one of these classes, call (612) 625-0120 for further information.

Classes that require preregistration are designated by a Δ symbol and a note stating that preregistration and course override are required. Preregistration for majors is generally held Monday through Friday during the week that regular registration begins. Dates are published each quarter in a newsletter distributed in all journalism classes. Copies are also available at the beginning of each quarter in the Undergraduate Studies Center (see below).

For Journalism Majors—A current transcript is required each time journalism majors preregister for these courses. Registration overrides are issued at the time of preregistration if the student has met all prerequisites, including admission to major status (see below), and the course is approved on the major program plan.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

For Non-Majors—About three weeks after preregistration, a late preregistration date for majors will be scheduled. After that date, registration overrides will be issued to non-majors who have instructor permission for courses that have space available. Non-majors do not need to supply a copy of their current transcript.

Admission to the Journalism Major—Students must apply for admission to the major. In order to get specific information about application procedures and requirements, students planning to major in journalism must attend a pre-major information meeting. Students must be admitted to the College of Liberal Arts and attend a pre-major information meeting before enrolling in Journalism 3003.

Undergraduate Studies Center—Further information about preregistration or declaring pre-journalism major status is available from the Undergraduate Studies Center, 15 Murphy Hall; telephone (612) 625-0120. Office hours are weekdays 9 a.m. to noon, and 1 to 4 p.m.

Continuing Education for Women (CEW) section available in the following course: Jour 1001

Jour 1001 INTRODUCTION TO MASS COMMUNICATION. 4 credits, tuition*: Resident \$280; Non-resident \$812.

The nature, functions, and responsibilities of communication media and agencies examined from the point of view of the professional journalist. News, opinion, entertainment, and persuasion functions; current trends. Specialized communications, aspects of advertising. **Must be taken A-F. Open to non-majors.** (No prereq)

Fall Qtr, Sec 1, M, 1:30-4, MacP Annex 1. *Offered through Continuing Education for Women*

Fall Qtr, Sec 2, M, 6-9, MurH 105

Winter Qtr, Sec 3, W, 6-9, MurH 105

Spring Qtr, Sec 4 T, 6-9, MurH 105

Jour 3008 MASS COMMUNICATION PROCESSES AND STRUCTURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Analysis of a variety of communication theories as they relate to mass communication processes; examination of major structural aspects of mass communication systems as they impact on mass communication processes. *Non-majors may register during late preregistration if space is available and after obtaining instructor approval.* **Must be taken A-F.** (Prereq Jour major or minor status, 3004 or ¶3004, Δ. **Preregistration and course override required; see page 247.** Limited to 50)

Spring Qtr, ★Sec 1, W, 6-9, MurH 105

Jour 3159 PUBLIC RELATIONS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

History and development of public relations practice and principles. Process and applications in a variety of institutional settings. Analysis and critique of public relations in contemporary society. *Non-majors may register during late preregistration if space is available and after obtaining instructor approval.* **Must be taken A-F.** (Prereq Jour major status, 3004, 3101 or 3201, Δ. **Preregistration and course override required; see page 247.** Limited to 25)

Fall Qtr, ★Sec 1, T, 6-9, MurH 311

Spring Qtr, ★Sec 2, W, 6-9, MurH 308

Jour 3173 MAGAZINE WRITING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Writing feature articles for general, class, and trade publications; study of market free-lance methods. *Non-majors may register during late preregistration if space is available and after obtaining instructor approval.* **Must be taken A-F.** (Prereq Jour major status, 3004, 3101, Δ. **Preregistration and course override required; see page 247.** Limited to 16)

Fall Qtr, ★Sec 1, M, 6-9, MurH 212

Fall Qtr, ★Sec 2, M, 6-9, MurH 308

Spring Qtr, ★Sec 3, T, 6-9, MurH 212

(See also The Compleat Scholar noncredit magazine writing courses, page 398)

Jour 3201 PRINCIPLES OF ADVERTISING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Theory, principles, and functions of advertising, its role in social, economic and marketing structure. Newspapers, magazines, radio, and television as advertising media. *Non-majors may register during late preregistration if space is available and after obtaining instructor approval.* **Must be taken A-F.** (Prereq Jour major or minor status, 3004, Δ. **Preregistration and course override required; see page 247.** Limited to 50)

Winter Qtr, ★Sec 1, T, 6-9, MurH 105

Jour 3241 ADVERTISING COPYWRITING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Advertising appeals and strategy; advertising for print and broadcast. Individual and group projects. *Non-majors may register during late preregistration if space is available and after obtaining instructor approval.* **Must be taken A-F.** (Prereq Jour major status, 3004, 3201, Δ. **Preregistration and course override required; see page 247.** Limited to 16)

Spring Qtr, ★Sec 1, Th, 6-9, MurH 212

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Jour 3301 BASIC PHOTOGRAPHIC COMMUNICATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Photography as creative communication. Fundamentals of photography; use of news cameras; darkroom processes. Film and processing expenses. *Non-majors may register during late preregistration if space is available and after obtaining instructor approval. Must be taken A-F.* (Prereq Jour major status, 3004, Δ . **Preregistration and course override required; see page 247.** Limited to 16)

Fall Qtr, ★Sec 1, TTh, 6-9, MurH 20

(See also CSch 0291, Photography in the Media: Images of Beauty and Documentation)

Jour 3321 BASIC MEDIA GRAPHICS. 4 credits, tuition* (includes \$10 course fee): Resident \$304; Non-resident \$862.60.

Basic introduction to mass media graphics, including design principles and history, production technology, typographic legibility, research and analysis of printing and production costs. *Non-majors may register during late preregistration if space is available and after obtaining instructor approval. Must be taken A-F.* (Prereq Jour major status, 3004, Δ . **Preregistration and course override required; see page 247.** Limited to 16)

Spring Qtr, ★Sec 1, TTh, 6-9, MurH 315, 320

Jour 3745 MASS MEDIA AND POPULAR CULTURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Examination of the mass media's role in the formation of popular culture and cultural discourse. Special attention given to media representations of culture, ethnicity, religion, social status, and gender. Analysis of media metaphors, caricatures, and stereotypes. Discussion of the social and industrial pressures influencing media representation. *Open to non-majors. Must be taken A-F.* (No prereq; Jour majors must have course approved on program plan. Pre-jour majors should not enroll in course. Limited to 180)

Spring Qtr, ★Sec 1, Th, 6-9, MurH 105, 308

Jour 3796 MASS MEDIA AND POLITICS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Analysis of role of mass media in politics; emphasis on television and electoral campaigns; news coverage versus newsmaking. Free press in democracy. *Open to non-majors. Must be taken A-F.* (Prereq Jour 1001 or Pol 1001 or #; Jour majors must have course approved on program plan. Pre-jour majors should not enroll in course. Limited to 72)

Spring Qtr, ★Sec 1, T, 6-9, MurH 308

(See also CSch 0213, Estranged Bedfellows: Freedom of the Press and Government)

Jour 3925 LIFE/CAREER PLANNING. 2 credits, tuition*: Resident \$147; Non-resident \$426.30.

Provides an opportunity for individuals of all ages and backgrounds to reassess their interests, values, skills, and formulate post-graduation plans. Acquaints the student with concepts of career development offering a systematic approach to lifelong career planning and career management. Content includes issues of career selection, maximizing a university degree in the world of work, career-pathing, preparing an effective résumé, conducting a pro-active job search, interviewing practice, and coping with transition issues. Each student will develop an individualized career plan. *Open to non-journalism majors. Journalism pre-majors and majors should register for ID 3925. Must be taken S-N.* (Prereq CLA jr or sr; others by #. Meets concurrently with ID 3925. Limited to a combined total of 25)

Winter Qtr, ★Sec 1, W, 6:20-8:50, MurH 308, Klein, Teschendorf

(See also The Practical Scholar noncredit career planning courses, page 411)

Jour 5159 CASE STUDIES IN PUBLIC RELATIONS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Case study approach to the application of public relations principles in the solution of problems in business, government, education, and community. Designed to enable students to sharpen their perceptions, insights, and judgments in examining practical and ethical questions. *Non-majors may register during late preregistration if space is available and after obtaining instructor approval. Must be taken A-F.* (Prereq Jour major status, 3004, 3159, Δ . **Preregistration and course override required; see page 247.** Inquire about graduate credit at time of registration. Limited to 25)

Winter Qtr, ★Sec 1, Th, 6-9, MurH 311

Jour 5171 ARTS REVIEWING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Book, theatre, visual media reviews. Analysis of leading critics and critical periodicals. Weekly reviews. *Non-majors may register during late preregistration if space is available and after obtaining instructor approval. Must be taken A-F.* (Prereq major status, 3004, 3101, Δ for Jour students; or # and Δ for professional writers and reporters and majors in performing and studio arts. **Preregistration and course override required; see page 247.** Inquire about graduate credit at the time of registration. Limited to 16)

Spring Qtr, ★Sec 1, W, 6-9, MurH 311

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Jour 5174 MAGAZINE EDITING AND PRODUCTION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Writing, editing, illustration, design, layout, photo-composition of a single-issue magazine. *Non-majors may register during late preregistration if space is available and after obtaining instructor approval. Must be taken A-F.* (Prereq Jour major status, 3004, 3173 or 3321 or 5302, #, Δ. **Preregistration and course override required; see page 247.** Inquire about graduate credit at the time of registration. Limited to 24)

Winter Qtr, ★Sec 1, MW, 4:15-6, MurH 315

Jour 5221 PUBLICATION GRAPHICS. 4 credits, tuition* (includes \$10 course fee): Resident \$304; Non-resident \$862.60.

Role of printing processes in graphic communication. Technique and production of illustrations. Significant developments in graphic arts technology. *Non-majors may register during late preregistration if space is available and after obtaining instructor approval. Must be taken A-F.* (Prereq Jour major or minor status, 3004, 8 cr in 3xxx- or 5xxx-level courses in art and design or #; Δ. **Preregistration and course override required; see page 247.** Inquire about graduate credit at the time of registration. Limited to 30)

Winter Qtr, ★Sec 1, T, 6-9, MurH 315

Jour 5251 PSYCHOLOGY OF ADVERTISING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Psychological principles, research techniques, and applications in advertising and selling. Consumer attitudes and behavior. Psychological mechanisms upon which effectiveness of advertisements and commercials depends. *Open to non-majors. Must be taken A-F.* (Prereq Psy 1001; Jour majors must have course approved on program plan. Pre-jour majors should not enroll in course. Inquire about graduate credit at the time of registration. Limited to 180)

Spring Qtr, ★Sec 1, M, 6-9, MurH 105

Jour 5272 ADVANCED ADVERTISING COPYWRITING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Advanced work in formulating creative strategy and writing advertising copy for print and broadcast media for various kinds of advertisers. *Non-majors may register during late preregistration if space is available and after obtaining instructor approval. Must be taken A-F.* (Prereq Jour major status, 3004, 3241, Δ. **Preregistration and course override required; see page 247.** Inquire about graduate credit at the time of registration. Limited to 16)

Winter Qtr, ★Sec 1, M, 6-9, MurH 311

Jour 5501 COMMUNICATION AND PUBLIC OPINION I. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Theories of communication process and of persuasion and attitude change. Functions of interpersonal and mediated communication in diffusion of information and in opinion formation. *Open to non-majors. Must be taken A-F.* (Prereq 16 crs in social science depts; Jour majors must have course approved on program plan. Pre-jour majors should not enroll in course. Inquire about graduate credit at the time of registration. Limited to 72)

Spring Qtr, ★Sec 1, M, 6-9, MurH 308

Jour 5801 INTERNATIONAL COMMUNICATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Global telecommunications, channels, and artifacts of international mass communication. Problems in the free flow of information. Roles of international organizations, journalism. Mass communication in social, political, educations, economic development; implications for conflict resolution. *Open to non-majors. Must be taken A-F.* (Prereq 16 crs in social science depts; Jour majors must have course approved on program plan. Pre-jour majors should not enroll in course. Inquire about graduate credit at the time of registration. Limited to 180)

Winter Qtr, ★Sec 1, Th, 6-9, MurH 105

Kinesiology (Kin)

(224 Cooke Hall: 625-1007)

College of Education

(School of Kinesiology and Leisure Studies)

Textbooks for most Kin courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Dance; Physical Education; and Recreation)

School of Kinesiology and Leisure Studies, Continuing Education—A wide variety of programs in kinesiology, physical education, and recreation are available to local school districts who wish to jointly design a continuing education experience to meet unique local staff needs. For further information in regard to individually designed programs for a particular district or building staff contact: Michael Wade, Coordinator, Continuing Education for the School of Kinesiology and Leisure Studies, Cooke Hall, 1900 University Ave. S.E., University of Minnesota, Minneapolis, MN 55455; or call (612) 625-2360.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Bruce D. Anderson, Associate Professor
 Mary Ann Bayless, Lecturer
 Allen Burton, Associate Professor
 Jean K. Freeman, Head Coach, Swimming and
 Diving, Women's Intercollegiate Athletics
 Peter Hancock, Associate Professor
 Clem Haskins, Head Basketball Coach
 Mary Jo Kane, Associate Professor
 Dan Kosmoski, Assistant Basketball Coach
 March Krotee, Associate Professor
 Arthur Leon, Professor
 Robert Pickert, Assistant Professor
 Robert Serfass, Associate Professor
 Lela June Stoner, Professor
 Michael Wade, Professor and Director of the
 School of Kinesiology and Leisure Studies
 Diane Wiese-Bjornstal, Assistant Professor

Sports Management—The School of Kinesiology and Leisure Studies offers a certificate in Sports Management through Continuing Education and Extension. For information, call 625-1007.

Coaching Licensure—Beginning Fall 1993, all courses necessary for the Minnesota State Coaching Licensure will be offered through Continuing Education and Extension and the summer session over a two-year period. For information, call (612) 625-1007.

PEL Courses—**Note:** Courses which may be applied to physical education teaching, adapted physical education, and/or state coaching licensure are designated as such by **PEL** at the end of the course description, before the prerequisite information, and include the following: Kin 3144, 5100, 5101, 5102, 5103, 5120, 5122, 5126, 5135, 5136, 5152, and 5980.

Kin 3110 HUMAN ANATOMY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75. Emphasizes bones, nerves, and muscles and their significance in physical education. **May not be taken S-N by Education students.** (No prereq)
 Fall Qtr, Sec 1, T, 4:15-6:30, CookeH 214, Serfass

Kin 3114 PREVENTION AND CARE OF INJURIES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75.

Policies for conditioning athletes in interscholastic and intercollegiate sports; safety controls. **May not be taken S-N by Education students. PEL.** (Prereq 3110 or CBN 1027)

Winter Qtr, Sec 1, T, 5:30-8, BFAB 210

Kin 3115 PHYSIOLOGICAL APPLICATION TO SPORTS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75.

Muscular contraction for strength development programs; contributions of training programs to endurance, speed, and skill acquisition; influence of training on the cardiovascular system; fatigue and recovery; early season training, pregame meals, and ergogenic aids in athletes. **May not be taken S-N by Education students. PEL.** (Prereq coaching licensure student or #)

Spring Qtr, Sec 1, M, 6:15-8:30, CookeH 215

Kin 3144 ADMINISTRATION. 2 credits, §3120, tuition*: Resident \$165; Non-resident \$478.50.

Principles, policies, and procedures involved in the coaching of interscholastic sports. **May not be taken S-N by Education students. PEL.** (Prereq kinesiology major, sr. A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★○Sec 1, W, 4:15-6:15, CookeH 215, Krotee

Kin 3171 BASKETBALL COACHING. 2 credits, tuition*: Resident \$165; Non-resident \$478.50.

Techniques, styles of offense and defense, conditioning and handling of players. **Must be taken A-F.** (No prereq)

Fall Qtr, Sec 1, W, 6:15-8, CookeH 215, Pickert, Kosmoski, Haskins

Kin 3176 SWIMMING AND DIVING COACHING. 2 credits, tuition*: Resident \$165; Non-resident \$478.50.

Instruction in and practice of the basic techniques used in competitive swimming and diving; rules and regulations governing staging of competition. **Must be taken A-F.** (No prereq. Limited to 20)

Spring Qtr, ★Sec 1, T, 4:15-6:15, Aquatic Center, Freeman

Kin 5100 TEACHING PHYSICAL EDUCATION FOR THE HANDICAPPED. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Introduction to the role of physical education in the education of the handicapped individual emphasizing understanding, principles of organization, administration, curriculum, supervision, and evaluation. **May not be taken S-N by Education students. PEL.** (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★○Sec 1, W, 6:15-8:15, (plus 1 hr arr), CookeH 214, Burton

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Kin 5101 PHYSICAL EDUCATION ACTIVITIES FOR THE HANDICAPPED. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Adaptation of methods, materials, and physical activities to meet the needs of the physically, mentally, or emotionally atypical student applied to specific handicaps in selected activity areas. **May not be taken S-N by Education students. PEL.** (Prereq 5100 or EPsy 5601. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Winter Qtr, ★○Sec 1, M, 6:15-8:45, CookeH 214, Burton

Kin 5102 PRACTICUM: PHYSICAL EDUCATION FOR THE HANDICAPPED IN AN ADAPTED SETTING. 1-3 cr (max 3 cr). 3 credits this offering, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Opportunity for teaching in schools or community settings, providing instruction for atypical individuals in the segregated or adapted environment; includes seminar for review of current theory and exchange of ideas and problems. **Must be taken S-N. PEL.** (Prereq 5100, 5101 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Winter Qtr, ★○Sec 1, T, 6:15-8:45, CookeH 215, Burton

Spring Qtr, ★○Sec 2, M, 6:15-8:45, CookeH 214, Burton

Kin 5111 SPORT FACILITIES. 3 credits, §Rec 5111, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Planning of areas and facilities for physical education and athletes, with emphasis on current trends and problems in the field. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Rec 5111. A joint Day/Extension class limited to a combined total of 10 Extension students)

Winter Qtr, ★○Sec 1, T, 4:15-6:30, CookeH 214, Anderson

Kin 5120 ADVANCED BIOMECHANICS/KINESIOLOGY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Principles of mechanics applied to human movement, analysis of motor skills, application to individual projects. **May not be taken S-N by Education students. PEL.** (Prereq undergrad biomechanics or Kin 3111, or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)
Fall Qtr, ★○Sec 1, TTh, 4:15-6:15 (plus 1 hr arr), CookeH 400, Stoner

Kin 5121 CONTRIBUTIONS OF BASIC SCIENCE TO KINESIOLOGY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Recent research in related physical sciences; application in selected areas. **May not be taken S-N by Education students.** (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Winter Qtr, ★○Sec 1, Th, 6:15-8:15 (plus 1 hr arr), NorrisH 3, Hancock

Kin 5122 APPLIED PHYSIOLOGY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Application of concepts in human physiology to exercise physiology, sports training, and physical activities with particular reference to respiratory and cardiovascular systems. **May not be taken S-N by Education students. PEL.** (Prereq 3386 or equivalent or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★○Sec 1, M, 6:15-8:15 (plus 1 hr arr), CookeH 215, Serfass

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Kin 5126 ADVANCED PSYCHOLOGICAL AND SOCIOLOGICAL DIMENSIONS OF PHYSICAL ACTIVITY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Advanced insight into the substance, nature, and significance of these dimensions of physical activity; focus on current research, issues, and trends as well as potential contributions. **May not be taken S-N by Education students. PEL.** (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★○Sec 1, T, 4:15-6:15 (plus 1 hr arr),
CookeH 215, Wiese-Bjornstal

Spring Qtr, ★○Sec 2, M, 4:15-6:15 (plus 1 hr arr),
CookeH 215, Wiese-Bjornstal

Kin 5132 MOTOR DEVELOPMENT. 3 credits, \$5131, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Development aspects of motor skill acquisition from birth to physical maturity. (Prereq 3132 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Winter Qtr, ★○Sec 1, W, 4:15-6:15 (plus 1 hr arr),
CookeH 215, Wade

Kin 5135 MOTOR LEARNING AND HUMAN PERFORMANCE. 3 credits, \$5130, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Mechanisms of human motor skill learning, emphasis on theories of motor learning and control of movement, motor memory, and individual differences. **May not be taken S-N by Education majors. PEL.** (Prereq 3113 or 3135 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★○Sec 1, T, 4:15-6:15 (plus 1 hr arr),
Norrish 3, Hancock

Kin 5136 PSYCHOLOGY OF COACHING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Psychological aspects of coaching at the elementary, secondary, and college levels. **May not be taken S-N by Education majors. PEL.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★○Sec 1, W, 4:15-6:15 (plus 1 hr arr),
CookeH 400, Wiese-Bjornstal

Spring Qtr, ★○Sec 2, Th, 4:15-6:15 (plus 1 hr arr),
CookeH 215, Krotec

Kin 5140 BIOMECHANICS OF SPORT SAFETY. 3 credits tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Forces and torques developed in sports activities; tolerances of the human body; techniques for preventing injury; design of protective equipment. (Prereq undergrad kinesiology. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★○Sec 1, Th, 4:15-6:15 (plus 1 hr arr),
CookeH 214, Stoner

Kin 5152 CURRICULUM DEVELOPMENT. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Trends, issues, and problems at selected levels of interests: elementary, secondary, junior college; for experienced teachers. **May not be taken S-N by Education majors. PEL.** (Prereq 5151 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Winter Qtr, ★○Sec 1, M, 4:15-6:15 (plus 1 hr arr),
CookeH 400, Bayless

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Kin 5163 DEVELOPMENT OF MOTOR ASSESSMENT. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

An in-depth view of concepts, problems, and issues in the assessment of the motor functioning of children who may be handicapped or nonhandicapped, including a critical survey of existing assessment tools and experience in developing a specific assessment tool. **May not be taken S-N by Education students.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)
Spring Qtr, ★●Sec 1, W, 6:15-8:45, CookeH 206, Burton

Kin 5170 FOUNDATIONS OF KINESIOLOGY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Establishing guidelines for individual and group professional action; examining pertinent social forces, educational philosophical philosophies, and general ethics. **May not be taken S-N by Education students.** (Prereq grad or MEd student. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★●Sec 1, M, 4:30-6:25, CookeH 400, Hancock

Kin 5375 COMPETITIVE SPORT FOR CHILDREN AND YOUTH. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

A number of cognitive, behavioral, and biological factors having important implications for competitive sport participants from early childhood through high school age are examined. Emphasis is placed on translating sport science research into practical implications for youth sports coaches, teachers, and administrators. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Winter Qtr, ★●Sec 1, Th, 4:15-6:15 (plus 1 hr arr), CookeH 215, Wiese-Bjornstal

Kin 5385 EXERCISE FOR SPECIAL POPULATIONS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Problems associated with exercise for persons with various conditions or diseases such as arthritis, cancer, diabetes, mental disorders, obesity, old age, or paralysis. Recommended exercise prescriptions and potential benefits for special populations. **Must be taken A-F.** (Prereq undergrad-level physiol or biol. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, W, 6:15-8:15, CookeH 214, Serfass

Kin 5455 RECREATIONAL SPORTS. 3 credits, §Rec 5455, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

In-depth analysis of processes and benefits of recreational sports programming and participation. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★●Sec 1, M, 4:15-6:30, CookeH 206, Anderson

Kin 5620 PRACTICUM: PREVENTION AND CARE OF ATHLETIC INJURIES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Overview of problems (recognition, principles, responsibilities) related to athletic injuries in secondary and college programs; demonstration and practice in training techniques and familiarity with the use of instruments for athletic rehabilitation. **Must be taken A-F.** (Prereq CBN 1027 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★●Sec 1, T, 5:30-8, BFAB 285

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Kin 5720 TOPICS IN KINESIOLOGY: SYSTEMATIC OBSERVATION. 1-12 cr (max 12 cr). 3 credits this offering, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Explores a variety of observational techniques and systems useful to physical education. **Must be taken A-F.** (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★○Sec 1, M, 4:15-6:15, CookeH 214, Bayless

Kin 5980 RESEARCH METHODOLOGY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Methods and design for research in health, kinesiology, and recreation. **May not be taken S-N by Education majors. PEL.** (Prereq education or grad student. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★○Sec 1, Th, 4:15-6:45, CookeH 214, 215, Kane

For information on noncredit conferences and workshops in Kinesiology, please contact the Department of Professional Development and Conferences Services, 214 Nolte Center for Continuing Education: telephone 625-6616.

Day School Classes—In addition to the Extension Classes listed above, day school classes are sometimes offered to educators during late afternoon, early evening, and weekend hours. For registration information about day school College of Education courses, see page 148 or call 625-6501.

Labor Education

For information on the Union Leadership Academy and other noncredit courses and workshops in labor education, please contact Labor Education Service, 437 Mgmt/Econ, University of Minnesota, 271 19th Avenue S., Minneapolis, MN 55455 (624-5020).

Landscape Architecture (LA)

(125 Architecture: 625-6860)

College of Architecture and Landscape Architecture

Textbooks for most LA courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Architecture; The Practical Scholar non-credit courses; and Horticultural Science)

Julie Bargmann, Assistant Professor of Landscape Architecture

Warren T. Byrd, Cleveland Professor

Craig Churchward, Lecturer in Landscape Architecture

Robert J. Gunderson, Lecturer in Landscape Architecture

Roger Martin, Professor of Landscape Architecture

Richard T. Murphy, Adjunct Assistant Professor of Landscape Architecture

Joan Nassauer, Professor of Landscape Architecture

Lance Neckar, Associate Professor of Landscape Architecture

Robert D. Sykes, Associate Professor of Landscape Architecture

Leon Satkowski, Associate Professor of Architecture

Pre-Landscape Architecture Studies—The Department of Landscape Architecture offers the following courses to be taken by students preparing for admission to the Bachelor of Environmental Design degree program. These courses along with other general distribution requirements constitute the pre-Landscape Architecture curriculum, most of which are offered through Continuing Education and Extension. Students admitted to the MLA professional degree program will receive advanced standing if they have completed LA 1025, 1026, or 3098. For more information on Landscape Architecture curricula, call Professor Roger Martin at 625-6052.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Landscape Architecture. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

LA 1024 THEORY OF LANDSCAPE DESIGN. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Analysis of design elements and forms involving line, direction, shape, proportion, and color, with emphasis on their function in design; a study of perception and man's relationship to his environment, and the social effects and psychological basis for design. Lectures and reference reading. Students will apply the theories studied to their own particular interest areas such as community development, issues in environmental quality, and residential landscape design. (No prereq)
Fall Qtr, Sec 1, T, 6-9:30, Arch 25, Churchward

LA 1025 BASIC VISUALIZATION I. 4 credits, §LA 1301, tuition*: Resident \$280; Non-resident \$812.

Perspective drawing, landscape sketching, visual analysis of landscape materials, presentation techniques for plans, sections, elevations, and diagrams. Recommended for entry level students and for professionals desiring additional graphic skills. (Prereq LA major or #)

Fall Qtr, Sec 1, MW, 6:45-9:30, Arch 55

LA 1026 BASIC VISUALIZATION II. 4 credits, §LA 3311, tuition*: Resident \$280; Non-resident \$812.

Students continue to refine their ability to execute acceptable line drawings developed in 1025 and to develop their own techniques. Continued emphasis on perspective sketching, color sense, psychology of graphic interpretation, mixed media, and printing reproduction processes. Recommended for entry level students and for professionals desiring additional graphic skills. (Prereq 1025)

Spring Qtr, Sec 1, MW, 6:30-9:30, Arch 40

LA 1401 THE DESIGNED ENVIRONMENT. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Principles and traditions within the design disciplines of architecture, landscape architecture, and urban design, along with references in the arts, sciences, and literature, will be explored in this review of the formal constructs of the designed environment. (No prereq. A joint Day/Extension class)

Winter Qtr, ○Sec 1, TTh, 5-6:45, Arch 45

LA 3098 LANDSCAPE ARCHITECTURE DESIGN. 4 credits, tuition*(includes \$25 course fee): Resident \$355; Non-resident \$982.

A design course with emphasis on spatial design at all scales. Design projects which focus on exploration of place and space-making qualities of plants, land form and structures. Class size allows instruction to adjust to various student needs and ability levels. Recommended for entry level LA students and for professionals desiring additional design skills. (No prereq. Limited to 15)

Winter Qtr, ★Sec 1, MW, 6:30-9:30, Arch 10

LA 3411 HISTORY OF ARCHITECTURE TO 1750. 4 credits, §Arch 3411, §ArtH 3411, tuition*(includes \$5 course fee): Resident \$335; Non-resident \$962.

History of architecture and city planning from antiquity to 1750, as illustrated by major monuments from Western and non-Western cultures. (No prereq. Meets concurrently with Arch 3411, ArtH 3411. Limited to a combined total of 100)

Fall Qtr, ★Sec 1, Th, 5:30-8:40, Arch 40, Satkowski

LA 3412 HISTORY OF ARCHITECTURE SINCE 1750. 4 credits, §Arch 3412, §ArtH 3412, tuition* (includes \$5 course fee): Resident \$335; Non-resident \$962.

A history of the major monuments, concepts, and theories of urbanism and architecture since 1750. (No prereq. Meets concurrently with Arch 3412, ArtH 3412. A joint Day/Extension class limited to a combined total of 100)

Winter Qtr, ★○Sec 1, Th, 5:30-8:40, Arch 25, Satkowski

LA 3413 HISTORY OF LANDSCAPE ARCHITECTURE. 4 credits, §Arch 3413, tuition* (includes \$5 course fee): Resident \$335; Non-resident \$962.

Lecture course introduction to history and theoretical issues of landscape architecture in typologically based survey format. Course covers landscape design from the ancient to the modern periods. (No prereq. Meets concurrently with Arch 3413. A joint Day/Extension class limited to a combined total of 100)

Spring Qtr, ★○Sec 1, TTh, 5:30-7:20, Phys 150, Neckar

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Continuing Education Courses Offered for Practicing Landscape Architects

—The following are courses offered by the Department of Landscape Architecture as continuing education courses for practicing landscape architects and others interested in specific aspects of the profession of landscape architecture. In most instances, qualified students may register for graduate credit at the University of Minnesota.

LA 5226 PROFESSIONAL PRACTICE. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Professional ethics, responsibility, and relations in business. Office management, preparation of professional communications, estimates, specifications, and contracts. Lectures, written exercises, and office visits. (No prereq. May not be taken for graduate credit. A joint Day/Extension class)

Winter Qtr, ●Sec 1, TTh, 6-8, Arch 40, Murphy

Noncredit Landscape Architecture Courses—For complete information about these courses, telephone (612)625-0174 *before* registering. All 0xxx-level LA courses must be taken S-N.

LA 0010 IRRIGATION DESIGN FOR LANDSCAPE ARCHITECTS. No credit, tuition*: \$280.

Intended for those who have a need to know the basics and more about irrigation—whether from a design, installation, or administrative review position—in order to enhance their professional development. Focuses on why irrigation is needed, when and when not to irrigate, the theory of irrigation, and practical solutions to problems. Topics include hydraulics, piping, head layout, irrigation systems, programming, water balance, and specialized applications. Participants receive hands-on familiarity with irrigation components throughout the course and are introduced to the latest technical and product innovations. By the end of the course, participants should be able to design a simple irrigation system, be conversant in technical specifications, and know how to evaluate the effectiveness of irrigation designs and built systems. **Must be taken S-N.** (No prereq)

Winter Qtr, Sec 1, Th, 5-8:30, NorH 305, Gunderson

LA 0011 SITE STORMWATER MANAGEMENT FOR LANDSCAPE ARCHITECTS. No credit, ¶LA 0012, tuition*: \$280.

(Prereq concurrent registration in 0012. Limited to 12)

Fall Qtr, ★Sec 1, Th, 5-8:30, NorH 305, Sykes

LA 0012 SITE STORMWATER MANAGEMENT LAB. No credit, ¶LA 0011, tuition* (includes \$30 course fee): \$310.

Must be taken S-N. (Prereq concurrent registration in 0011. Limited to 12)

Fall Qtr, ★Sec 1, T, 5:30-8, NorH 305, Sykes

LA 0013, 0014 TOPICS: H.W.S. CLEVELAND SEMINARS. No credit. Tuition* each quarter: \$280.

These H.W.S. Cleveland Seminars are designed for practicing landscape architects and for students of landscape architecture. They are organized to give practitioners access to the most recent work of leading scholars and practitioners who are invited to visit the Department of Landscape Architecture as H.W.S. Cleveland professors. 0013: 0014: *For more information, call 626-8713 after September 23. Must be taken S-N.* (No prereq)

Fall Qtr, 0013, Sec 1, TTh, 3:35-5:30, Arch 25, Byrd, Martin

Winter Qtr, 0014, Sec 1, TTh, 3:35-5:30, Arch 40, Bargmann

Languages

See Area Studies Programs, page 75; and the Institute of Languages and Literatures, page 237.

Language Laboratories

(See page 51)

Latin

See Classical Studies

Latin American Studies

(See Area Studies Programs; and the Institute of Languages and Literatures)

International Internships and Study Abroad—

Internships and directed study are arranged in Ecuador through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the MSID office in 106 Nicholson Hall for more information.

Law, Business

(See Business Law)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Learning and Academic Skills (LAsK)

(104 Eddy Hall: 624-3323)

College of Liberal Arts

Textbooks for most courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Susan A. Aase, Associate Education Specialist
Joyce D. Weinsheimer, Program Director of
Learning and Academic Skills Center

(See also Rhetoric; General College; CSch 0600, Study Skills; CSch 0620, Grammar Refresher; CSch 0640, Rapid Reading and Comprehension; and other study helps, page 456)

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in LAsK. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

A student who does not attend the first class meeting of a LAsK course will not be allowed to continue. A written verification of non-attendance must be obtained from the instructor for a student to receive a 100% tuition refund.

LAsK 1001 BECOMING A MASTER STUDENT. 2 credits. (Credits do not count toward a B.A. degree.) Tuition* (includes \$30 special fee): Resident \$170; Non-resident \$436.

Practical assistance to the student in developing efficient study habits, organizing materials, preparing for examinations, and improving the speed and comprehension of reading. Diagnosis and practice in basic skill areas such as reading, spelling, vocabulary, and elementary composition also are provided through individualized learning projects. (No prereq. Limited to 30)

Fall Qtr, ★Sec 1, MW, 11:15 a.m.-12:05, EddyH 20

Fall Qtr, ★Sec 2, T, 6:20-8:50, EddyH 102

Fall Qtr, ★Sec 3, W, 6:20-8:50, EddyH 102

Winter Qtr, ★Sec 4, MW, 11:15 a.m.-12:05, EddyH 20

Winter Qtr, ★Sec 5, T, 6:20-8:50, EddyH 102

Winter Qtr, ★Sec 6, W, 6:20-8:50, EddyH 102

Spring Qtr, ★Sec 7, MW, 11:15 a.m.-12:05, EddyH 20

Spring Qtr, ★Sec 8, T, 6:20-8:50, EddyH 102

Spring Qtr, ★Sec 9, W, 6:20-8:50, EddyH 102

LAsK 1301 CAREER PLANNING FOR DISABLED STUDENTS. 2 credits. (Credits do not count toward a B.A. degree.) Tuition*: Resident \$140; Non-resident \$406.

Assess interests, values, needs, and learning style as it relates to occupational choices. Learn decision-making strategies to identify possible career options. (No prereq. Limited to 20)

Fall Qtr, ★Sec 1, W, 4:30-6:30, KoltH S133, Aase

LAsK 1302 JOB-SEEKING SKILLS FOR DISABLED STUDENTS. 2 credits. (Credits do not count toward a B.A. degree.) Tuition*: Resident \$140; Non-resident \$406.

Develop skills necessary to conduct a productive job search. Learn strategies to write a resume, complete the application process, and interview effectively. (Prereq 1301. Limited to 20)

Winter Qtr, ★Sec 1, W, 4:30-6:30, KoltH S136, Aase

LAsK 1303 INTERNSHIP EXPERIENCE FOR DISABLED STUDENTS. 2 credits. (Credits do not count toward a B.A. degree.) Tuition*: Resident \$140; Non-resident \$406.

Gain work experience through a paid or volunteer internship. (Prereq 1302. Limited to 20)

Spring Qtr, ★Sec 1, W, 4:30-6:30, KoltH S136, Aase

Legal Studies Education

(See General College)

Linguistics (Ling)

See Institute of Languages and Literatures, page 237.

Logistics Management (LM)

(1235 Management/Economics: 624-5055)

Carlson School of Management

Textbooks for most LM courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

Frederick J. Beier, Professor

Jerry E. Fruin, Associate Professor of Agricultural and Applied Economics

Howard S. Gochberg, Lecturer

Donald V. Harper, Professor

Logistics Management courses may not be taken S-N by Carlson School of Management students.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Note—Students taking Carlson School of Management upper division undergraduate courses through CEE are expected to have completed the equivalent of 90 quarter college credits with a minimum of a “B-” grade average.

LM 3000 INTRODUCTION TO LOGISTICS MANAGEMENT. 4 credits, §Tran 3064, §Tran 8264, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Managing the flow of an organization’s physical products (physical supply and distribution) and the linkages between the process of controlling the physical flow of products and the organization’s major functions, i.e., finance, marketing, and operations management. Logistics topics and analysis of the impact of logistics decisions on other functional areas. Simulation exercise. **May not be taken S-N.** (Prereq Econ 1101 or equivalent and at least 90 credits completed or in progress. **Open to nondegree students with equivalent experience.** Limited to 40) Fall Qtr, ★Sec 1, T, 5:30-8:30, BlegH 245 Winter Qtr, ★Sec 2, T, 5:30-8:30, BlegH 225

LM 5020 (formerly 3020/8020) ADVANCED LOGISTICS MANAGEMENT. 4 credits, §3020, §8020, §Tran 3064, §Tran 8264, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

Management of the flow of physical products (physical supply and physical distribution) of an organization. Topics include transportation alternatives, customer service, inventory management, location decisions, warehousing, logistics information systems, international logistics, and logistics system design. Consists primarily of case problems. Includes logistics simulation exercise. **May not be taken S-N.** (Prereq LM 3000 or 5030 or equivalent and at least 90 credits completed or in progress. **Open to nondegree students with equivalent experience.** Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, T, 5:30-8:30, BlegH 135

LM 5030 (formerly 3010/8010) PRINCIPLES OF TRANSPORTATION. 4 credits, §3010, §8010, §Tran 3054, §Tran 8154. **Tentatively scheduled for 1994-95.**

MacPhail Center

See page 277.

MBA Program

See page 94.

Management (Mgmt)

(835 Management/Economics: 624-5232)

Carlson School of Management

Textbooks for Mgmt courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also Business, Government, and Society; Interdepartmental Study; and the Management Advancement Program)

Phil Anderson, Lecturer
Charles Flaherty, Lecturer/Coordinator of Management
John M. Hasselberg, Lecturer
Dileep Rao, Lecturer
Raoul Schander, Lecturer
William Seeley, Lecturer
Paul M. Vaaler, Teaching Assistant

Except for Management 5101 (which may be taken S-N), School of Management degree students must take Management courses A-F.

Note—Students taking Carlson School of Management upper division undergraduate courses through CEE are expected to have completed the equivalent of 90 quarter college credits with a minimum of a “B-” grade average.

Mgmt 3001 FUNDAMENTALS OF MANAGEMENT. 4 credits, ¶8001, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

Leadership and management functions such as those required to establish goals, policies, procedures, and plans are studied. Motivation, planning, and control systems, and concepts of organizational structure and behavior are also reviewed. **May not be taken S-N.** (Prereq at least 90 credits completed or in progress. Limited to 125)

Fall Qtr, ★Sec 1, M, 6-8:45, AndH 230, Flaherty

Fall Qtr, ★Sec 2, T, 6-8:45, AndH 230, Flaherty

Winter Qtr, ★Sec 3, W, 6-8:45, AndH 370,

Flaherty

Spring Qtr, Sec 4, M, 6-8:45, AndH 370, Flaherty

Spring Qtr, ★Sec 5, T, 6-8:45, AndH 370, Flaherty

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Mgmt 3002 PSYCHOLOGY IN MANAGEMENT. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

Centers on development and application of behavior principles, methods, and skills which underlie managerial competence in preventing and solving problems within and between individuals and groups and aid in effective utilization of human resources. Various laboratory procedures are used to highlight concepts, methods and skills and furnish practice in applying them to management problems. **May not be taken S-N.** (Prereq at least 90 credits completed or in progress. Limited to 36)

Fall Qtr, ★Sec 1, W, 6-8:45, BlegH 425

Winter Qtr, ★Sec 2, M, 6-8:45, BlegH 250

Winter Qtr, ★Sec 3, T, 6-8:45, BlegH 205

Spring Qtr, ★Sec 4, W, 6-8:45, BlegH 255

Mgmt 3004 BUSINESS POLICY: STRATEGY FORMULATION AND IMPLEMENTATION. 5 credits, tuition* (includes \$16 special fee): Resident \$428.50; Non-resident \$1212.25. (IS)

Undergraduate-level capstone course designed to develop skill in the general management functions of identifying and analyzing strategic issues and problems, establishing corporate or divisional goals, and designing realistic programs of action. Case analysis and discussion in class. Students also meet in small groups to prepare cases and occasionally presentations to be made to the entire class. Concepts and approaches to strategic planning are taught in this course. These concepts as well as concepts, tools, and theories previously presented in other courses are applied to solve goal selection and strategy implementation problems. Usually the viewpoint of the general line manager (department, division, or executive level) is taken. **May not be taken S-N.** (Prereq senior and completion of business core or ¶final core course. Limited to 36)

Fall Qtr, ★Sec 1, T, 5:30-9, BlegH 260

Winter Qtr, ★Sec 2, W, 5:30-9, HHHctr 20

Spring Qtr, ★Sec 3, M, 5:30-9, BlegH 240

Mgmt 3008 ENTREPRENEURSHIP AND THE SMALLER ENTERPRISE. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

Assessment of opportunities and constraints in establishing and managing one's own firm; topics include structuring a new venture, buying into an existing enterprise, owning an enterprise versus becoming a principal employee in a new venture. Case method. **May not be taken S-N.** (Prereq completion of business core courses or #. Limited to 30)

Winter Qtr, ★Sec 1, M, 6-8:45, AndH 210, Rao

Mgmt 5101 ADVANCED TOPICS IN MANAGEMENT: PERSPECTIVES ON MANAGEMENT. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Students are challenged to understand, develop, and adopt a personal leadership position and values profile. Participants examine organizations with effective and compassionate leadership in order to understand how they empower their associates. Discussion will go beyond simple participative management and will delve into world-class competitive organizations where people are valued for their individual leadership and unique creativity. **May be taken S-N.** (Prereq senior or graduate student and #. May not be taken for graduate credit. Limited to 36)

Fall Qtr, ★Sec 1, W, 6-8:45, BlegH 415, Schander

Mgmt 5101 ADVANCED TOPICS IN MANAGEMENT: MANAGERIAL ETHICS. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

Introduction to various ethics theories with application to business problems in negotiation, truth-telling, insider trading, corporate responsibility, international business, and other selected topics. Emphasis on developing practical strategies for ethical decision making on the job. **May be taken S-N.** (Prereq at least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota. Limited to 36)

Winter Qtr, ★Sec 2, T, 6-8:45, RarigC 616, Vaaler

Mgmt 5101 ADVANCED TOPICS IN MANAGEMENT: SMALL BUSINESS MANAGEMENT. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

The course focuses attention on the role of small business, alternative entry strategies, and functional expertise required as the firm competes in its environment. **May not be taken S-N.** (Prereq at least 90 credits completed or in progress. Qualified students may register for graduate credit at the University of Minnesota. Limited to 36)

Spring Qtr, ★Sec 3, W, 6-8:45, BlegH 245,

Flaherty

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Management Advancement Program

See Professional and Career Development.

Management Information Systems

(See Information and Decision Sciences, page 233.)

Management Science

See Information and Decision Sciences, page 233; and Operations and Management Science, page 282.

Marketing (Mktg)

(1235 Management/Economics: 624-5055)

Carlson School of Management

Textbooks for most Mktg courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

Paul Acito, 3M Company
 Stowe Badenoch, University of Wisconsin—Stout
 John Dahl, 3M Company
 John Grubb, ADC Telecommunications
 Welcome Jerde, W. Jerde Marketing
 James Johnson, St. Cloud State University
 John Nicolay, Crossroads Management Advisors
 David Ordos, Northwestern National Life Insurance Company
 Paul Riedesel, Leon Tyler Marketing Research
 Robert Sedlacek, Unisys Corporation
 Pam Weisenberger, Minnesota Mutual Life Insurance Co.

Business degree students must take Marketing courses A-F.

Note—Students taking Carlson School of Management upper division undergraduate courses through CEE are expected to have completed the equivalent of 90 quarter college credits with a minimum of a “B-” grade average.

Mktg 3000 PRINCIPLES OF MARKETING. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

Study of the basic policy and strategy issues in marketing and the environmental factors that affect these issues. Legal, behavioral, ethical, competitive, economic, and technological factors are examined as they affect product, pricing, promotion, and marketing channel decisions. (Prereq Econ 1101 or equivalent and at least 90 credits completed or in progress. **May not be taken S-N.** Limited to 250)

Fall Qtr, ★Sec 1, T, 5:30-8:30, AndH 310

Fall Qtr, ★Sec 2, Th, 5:30-8:30, Richfield HS 143 (Limit 30)

Winter Qtr, ★Sec 3 W, 5:30-8:30, BlegH 5

Spring Qtr, ★Sec 4 M, 5:30-8:30, Roseville Area HS 143 (Limit 35)

Spring Qtr, ★Sec 5, W, 5:30-8:30, BlegH 5

Mktg 3010 BUYER BEHAVIOR AND MARKETING ANALYSIS. 4 credits, ¶3098, 3095, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Identifying and applying secondary and primary data to solve marketing problems. Special consideration is given to consumer and organizational buyer behavior. Topics include survey and experimental research techniques, market segmentation, data analysis, behavior concepts and processes, consumer and organizational decision-making models, and managerial applications of these models. (Prereq 3000 and OMS 1020 or equivalent, and at least 90 credits completed or in progress. Limited to 45)

Fall Qtr, ★Sec 1, W, 5:30-8:30, BlegH 235

Winter Qtr, ★Sec 2, T, 5:30-8:30, BlegH 415

Spring Qtr, ★Sec 3, M, 5:30-8:30, BlegH 140

Mktg 3020 MARKETING OPERATIONS MANAGEMENT. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Development of marketing plans, primarily for manufacturing organizations. Analytical methods for developing and appraising marketing programs, factors important in shaping marketing plans. Planning for selling, communication, distribution, pricing, product development and marketing research activities. (Prereq 3010 and at least 90 credits completed or in progress. Limited to 45)

Fall Qtr, ★Sec 1, T, 5:30-8:30, BlegH 415

Winter Qtr, ★Sec 2, Th, 5:30-8:30, BlegH 240

Spring Qtr, ★Sec 3, W, 5:30-8:30, BlegH 415

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Mktg 3030 SALES AND DISTRIBUTION MANAGEMENT. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

The design and management of marketing systems for distributing goods and services to industrial users and ultimate consumers. Institutional, functional, and social aspects of distribution channels, with emphasis on the managerial problems of channel design, integrating, and control. Managing the personal selling function as an integral part of the overall distribution system, with emphasis on salesforce organization, selection, training, motivation, compensation, forecasting, budgeting, and control. (Prereq 3020 and at least 90 credits completed or in progress. Limited to 45)

Winter Qtr, ★Sec 1, M, 5:30-8:30, BlegH 235

Mktg 3050 MARKETING COMMUNICATIONS. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

The communications aspect of the marketing mix and the communication process. Emphasis on advertising, media alternatives, and research. Integration of the sales force in communications strategy is discussed. (Prereq 3020 and at least 90 credits completed or in progress. Limited to 45)

Spring Qtr, ★Sec 1, T, 5:30-8:30, BlegH 415

Mktg 3065 RETAIL MANAGEMENT. 4 credits, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Retailing principles, problems, and trends as they relate to various types of retailing institutions. Assignment of trade journals and supplementary readings for in-store study (buying and pricing) with a local retailer. (Prereq 3010 and at least 90 credits completed or in progress. Limited to 45)

Fall Qtr, ★Sec 1, Th, 5:30-8:30, BlegH 155

Spring Qtr, ★Sec 2, Th, 5:30-8:30, BlegH 155

Mktg 3090 MARKETING TOPICS: BUSINESS-TO-BUSINESS MARKETING (formerly Industrial Marketing). 4 credits (may be repeated for credit), tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

An analysis of business-to-business markets and the role of the marketing function. Formulation of marketing programs in a variety of business-to-business marketing situations. Includes pricing, communication, and distribution policies and marketing strategy. (Prereq 3010 and at least 90 credits completed or in progress. Limited to 45)

Fall Qtr, ★Sec 1, M, 5:30-8:30, BlegH 415

Materials Science and Engineering (MatS)

(151 Amundson Hall: 625-1313)

Institute of Technology

Textbooks for most MatS courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Leonard Laskow, ASM

MatS 0001C INTRODUCTION TO MATERIALS. 3 certificate credits, tuition*: \$210.

Structure of Metals; Solidification of Metal; Phase Diagrams; Solid Solutions; Heat Treatment Steel; Deformation of Metals; Alloy Selection; Stainless Steels; Metal Joining; Failure Analysis. (No prereq. High school chemistry and high school physics strongly recommended. Limited to 35)

Fall Qtr, ★Sec 1, M, 6:20-8:40, AmundH 116,

Laskow

Mathematics (Math)

(127 Vincent Hall: 625-8883)

Institute of Technology

Textbooks for most Math courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Your attention is called to the Mathematics and Science Certificate Program, and the Undergraduate Development Certificates in Engineering and Science—45 credits, in the Degrees and Certificates section of this Bulletin.

(See also mathematics courses in General College; and The Practical Scholar's First Step: Preparation for University Mathematics noncredit courses, page 415)

Stephen Agard, Professor

Glenn S. Ballard, Lecturer

John Corbett, Lecturer

William A. Dolid, Instructor, Minneapolis

Community College, Lecturer

Zoltan Fischer, Instructor, Minneapolis Community College, Lecturer

David Frank, Associate Professor

Lawrence F. Gray, Professor

Shamlell Gupta, Associate Professor, College of St.

Catherine, Lecturer

Lawrence R. Harper, Associate Professor

Harlan Hewitt, Instructor, North Hennepin

Community College, Lecturer

Steve J. Hlusak, Instructor, North Hennepin

Community College, Lecturer

Howard Jenkins, Associate Professor

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

- Gary B. Kampf, Computer Engineer, Honeywell, Lecturer
 Nickolas Konopliv, Lecturer
 Richard A. Langlie, Instructor, North Hennepin Community College, Lecturer
 Edwin Lundgren, Instructor, Lakewood Community College, Lecturer
 Norman Meyers, Professor
 Chester L. Miracle, Associate Professor
 Richard B. Moeckel, Professor
 Flaura Ricketts, Instructor, Normandale Community College, Lecturer
 Robert N. Sackett, Instructor, Normandale Community College, Lecturer
 U. Kurt Scholz, Associate Professor of Mathematics, College of St. Thomas, Lecturer
 Bernard P. Smith, Instructor, Normandale Community College, Lecturer
 James G. Swenson, Lecturer
 V. C. Varadachari, Instructor, Lakewood Community College, Lecturer
 Richard A. Wetzler, Instructor, Lakewood Community College, Lecturer

Most courses needed to complete the B.A. in mathematics are available through Extension Classes. Interested students should call CEE Counseling, 625-2500, for details.

A minor is available in mathematics. Interested students should call CEE Counseling, 625-2500, for details.

Mathematics prerequisites

Any student who has completed four years of high school mathematics, including solid geometry and trigonometry within the last two years with above average grades may register in Math 1211. However, even if a student has had four years of high school mathematics, but it has been more than two years since the last mathematics course was completed, then the student should register in Math 1111 or Math 1201. Also the following rule usually applies: a student who has been out of high school five years or more, or who did not have second-year algebra in high school, should register either for General College 0625, Intermediate Algebra, Part I, or General College 0631, Intermediate Algebra, Part II. A student who knows very little about algebra should register for General College 0621, Elementary Algebra. See the General College course listings for descriptions.

The entrance requirement for the Institute of Technology is four years of high school mathematics, including solid geometry and trigonometry or Math 1111 and Math 1008.

All mathematics classes have prerequisite courses. For students who have not had the prerequisite courses, several mathematics courses have math placement scores as one of the ways to satisfy the prerequisites. Students will be given this exam on the first night of class. Students who do not pass this exam and have not passed the prerequisite courses will be asked to cancel the course and register for the prerequisite class.

Placement Exam—There is a regular placement exam to advise students which course they should register for. If you would like to take this placement exam before you register, it will be given at the beginning of registration this fall at 6 p.m. on Tues., Aug. 10, 1993, in Nolte Center 229. It is also given at 6 p.m. on Wed., Nov. 3, 1993, in Nolte Center 140, and at 6 p.m. on Wed., Feb. 2, 1994, in Nolte Center 125 (Library). There is no fee or pre-registration for this exam. The test lasts approximately 1 hour. Students may not use calculators. For further information about math placement, telephone Professor Miracle at (612) 625-2095.

Mathematics for nonmajors and prebusiness students

Math 1131 and Math 1142 are designed in cooperation with the Carlson School of Management for benefit of prebusiness students. However, both courses are the second course of a two-course sequence. The first course in both sequences is Math 1111. Business, accounting, and MBA students usually take Math 1111 followed by either Math 1131 or Math 1142.

Calculus refresher course

Math 5090 is for students who have completed at least one year of calculus within the last 4 to 6 years. If a student finished calculus 7 or more years ago, then it is usually best to start the calculus sequence again by taking Math 1211. A student may not take this course unless he or she has had at least one year of calculus in college. Math 5090 provides students who have been out of school for several years with the necessary background to enter more advanced courses that require a fresh knowledge of calculus.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Mathematics. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

The Practical Scholar program offers a series of review and skill-building courses which are especially valuable for people who encounter blocks in mathematics, or who are afraid of mathematics. For a complete listing of courses and supportive services, refer to page 411.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.
 * Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Note—Math 0005 (Arithmetic for Adults), 0006 (Elementary Algebra), 0007 (Plane Geometry), and 0009 (Intermediate Algebra) are no longer being offered through the Department of Mathematics. Students interested in noncredit introductory mathematics courses should see the Preparatory Mathematics Program in the General College section of this bulletin, page 202.

Continuing Education for Women (CEW) sections available in the following courses: Math 1111, 1211

Math 1005 INTRODUCTION TO ELEMENTARY MATHEMATICS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

For pre-elementary education students. Elementary computer programming (BASIC), progressions, financial mathematics, counting problems, other selected topics. (Prereq 1111 or equivalent or #. Limited to 50)

Winter Qtr, ★Sec 1, TTh, 6:10-7:50, Arch 50

Math 1006 INTRODUCTION TO ELEMENTARY MATHEMATICS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Topics selected from areas such as probability theory, geometry, and number theory. Usage of computer continues. Restricted to elementary education students. (Prereq 1005 and pre-elementary education student)

Spring Qtr, ★Sec 1, TTh, 6:10-7:50, Arch 55

Math 1008 TRIGONOMETRY. 4 credits, §1201, tuition*: Resident \$280; Non-resident \$812. (IS)

Analytic trigonometry, identities, equations, properties of trig functions; right and oblique triangles. **See Mathematics prerequisites, page 263.** (Prereq plane geometry and 2 years of high school algebra and mathematics placement score or grade of C or better in GC 0631 and plane geometry. A student who has already had Math 1201 may not receive credit for this course. Limited to 30)

Fall Qtr, ★Sec 1, MW, 6:10-7:50, VinH 213

Fall Qtr, ★Sec 2, TTh, 6:10-7:50, VinH 213

Winter Qtr ★Sec 3, MW, 6:10-7:50, VinH 213

Winter Qtr, ★Sec 4, TTh, 6:10-7:50, VinH 213

Spring Qtr, ★Sec 5, MW, 6:10-7:50, VinH 213

Spring Qtr, ★Sec 6, TTh, 6:10-7:50, VinH 213

Math 1111 COLLEGE ALGEBRA AND ANALYTIC GEOMETRY. 5 credits, §1201, tuition*: Resident \$350; Non-resident \$1015. (IS)

Functions and graphs, quadratic equations, progressions, inequalities, complex numbers, theory of equations, permutations and combinations, probability, systems of equations, determinants, graphing of linear and quadratic equations, conics in standard position, logarithms. *May be used to replace 1031.* **See Mathematics prerequisites, page 263.** (Prereq plane geometry, 2 years high school algebra and mathematics placement score or plane geometry and GC 0631. Limited to 35)

Fall Qtr, ★Sec 1, MW, 6:10-8:15, VinH 1

Fall Qtr, ★Sec 2, MW, 6:10-8:15, VinH 20

Fall Qtr, ★Sec 3, MW, 5:30-7:35, AkerH 313

Fall Qtr, ★Sec 4, MW, 6:30-8:35, Roseville Area HS 143

Fall Qtr, ★Sec 5, TTh, 6:10-8:15, VinH 1

Fall Qtr, ★Sec 6, TTh, 5:30-7:35, AmundH 124

Fall Qtr, ★Sec 7, TTh, 6:30-8:35, Richfield HS 242

Winter Qtr, ★Sec 8, MW, 6:10-8:15, VinH 301

Winter Qtr, ★Sec 9, MW, 6:10-8:15, VinH 1

Winter Qtr, ★Sec 10, TTh, 5:30-7:35, MechE 202

Winter Qtr, ★Sec 11, TTh, 6:10-8:15, VinH 1

Winter Qtr, ★Sec 12, TTh, 1-3:05, MacP. *Offered through Continuing Education for Women*

Spring Qtr, ★Sec 13, MW, 6:10-8:15, VinH 1

Spring Qtr, ★Sec 14, MW, 5:30-7:35, VinH 301

Spring Qtr, ★Sec 15, TTh, 6:10-8:15, VinH 6

Spring Qtr, ★Sec 16, TTh, 6:10-8:15, VinH 1

Non-business students interested in the Master of Business Administration degree should take Math 1131.

Math 1131 FINITE MATHEMATICS. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

(For students in prebusiness and social and behavioral sciences.) Elementary computer programming, financial math, probability, linear algebra, linear programming, Markov chains. **See Mathematics prerequisites, page 263.** (Prereq 1111 or Mathematics placement score. Limited to 50)

Fall Qtr, ★Sec 1, TTh, 6:10-8:15, VinH 16

Winter Qtr, ★Sec 2, MW, 6:10-8:15, VinH 16

Spring Qtr, ★Sec 3, MW, 6:10-8:15, VinH 16

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Math 1142 SHORT CALCULUS. 5 credits, §1211, tuition*: Resident \$350; Non-resident \$1015. (IS)

(A second course of a two-quarter sequence for students in prebusiness administration curriculum and for other students requiring a minimal amount of calculus. Students pursuing an Institute of Technology degree or who plan to take several quarters of calculus should not register for this course) Derivatives, integrals, differential equations, maxima and minima, partial differentiation, applications. See **Mathematics prerequisites, page 263.** (Prereq 1111 or mathematics placement score. Limited to 35)

Fall Qtr, ★Sec 1, MW, 6:10-8:15, VinH 209
 Fall Qtr, ★Sec 2, TTh, 6:10-8:15, VinH 209
 Winter Qtr, ★Sec 3, MW, 6:30-8:35, Roseville Area HS 146
 Winter Qtr, ★Sec 4, TTh, 6:10-8:15, VinH 209
 Spring Qtr, ★Sec 5, MW, 6:10-8:15, VinH 209
 Spring Qtr, ★Sec 6, TTh, 6:10-8:15, VinH 209

Math 1201 PRE-CALCULUS. 5 credits, §1008, 1111, tuition*: Resident \$350; Non-resident \$1015. (IS)

Inequalities, analytical geometry, complex numbers, binomial theorem, mathematical induction, functions and graphs, and trigonometric, exponential and logarithmic functions. *May be used to replace 1151.* See **Mathematics prerequisites, page 263.** (Prereq GC 0631 or 4 years of high school math including trigonometry and mathematics placement score. For students in both IT and CLA who need a quick review of high school higher algebra and trigonometry before taking the calculus sequence. Limited to 35)

Fall Qtr, ★Sec 1, MW, 6:10-8:15, VinH 364
 Fall Qtr, ★Sec 2, MW, 5:30-7:35, LindH 305
 Fall Qtr, ★Sec 3, MW, 6:30-8:35, Roseville Area HS 146
 Fall Qtr, ★Sec 4, TTh, 6:10-8:15, VinH 364
 Fall Qtr, ★Sec 5, TTh, 6:30-8:35, Richfield HS 142
 Winter Qtr, ★Sec 6, MW, 6:10-8:15, VinH 20
 Winter Qtr, ★Sec 7, MW, 5:30-7:35, AkerH 319
 Winter Qtr, ★Sec 8, TTh, 6:10-8:15, VinH 364
 Spring Qtr, ★Sec 9, MW, 6:10-8:15, VinH 206
 Spring Qtr, ★Sec 10, TTh, 6:10-8:15, VinH 113

Advising Note—Students who have taken one calculus course at a school other than the University of Minnesota fit best in the sequence 1211-1221. Students who are starting calculus and intend to take at least two quarters through Extension Classes may take Math 1251-1252, but may also take 1211-1221; this sequence gives students more flexibility. Students who have had 15 or more quarter credits (9 or more semester credits) at another school will find it to

their advantage to take a course from the sequence 1241-3311-3321-3331. The sequence 1241-3311-3321-3331 (20 credits) covers the same material as 1261-3251-3252-3261-3262 (20 credits). Students who are working on a degree or certificate program at the University of Minnesota and who plan to take all their mathematics classes through Extension will find scheduling and related matters easier if they enroll in the sequence 1241-3311-3321-3331. **For further information, contact a CEE adviser at 625-2500.**

Math 1211 CALCULUS I. 5 credits, §1142, 1311, 1611, tuition*: Resident \$350; Non-resident \$1015. (IS)

Analytic geometry and calculus of functions of one variable, applications. Infinite series and sequences. May be used to replace 1251. See **Mathematics prerequisites, page 263.** (Prereq 1201 with grade of C or better, or 1111 and 1008 with grade of C or better, or 4 years of high school math and math placement score. Limited to 35)

Fall Qtr, ★Sec 1, MW, 6:10-8:15, AkerH 209
 Fall Qtr, ★Sec 2 MW, 6:10-8:15, VinH 301
 Fall Qtr, ★Sec 3, MW, 6:30-8:35, Roseville Area HS 145
 Fall Qtr, ★Sec 4, TTh, 6:10-8:15, VinH 20
 Fall Qtr, ★Sec 5, TTh, 6:30-8:35, Richfield HS 243
 Winter Qtr, ★Sec 6, MW, 6:10-8:15, VinH 364
 Winter Qtr, ★Sec 7, MW, 5:30-7:35, VinH 206
 Winter Qtr, ★Sec 8, MW, 6:30-8:35, Roseville Area HS 244
 Winter Qtr, ★Sec 9, TTh, 6:10-8:15, VinH 16
 Spring Qtr, ★Sec 10, MW, 6:10-8:15, VinH 364
 Spring Qtr, ★Sec 11, TTh, 6:10-8:15, VinH 20
 Spring Qtr, ★Sec 12, TTh, 5:30-7:35, AkerH 313
 Spring Qtr, ★Sec 13, TTh, 1-3:05, MacP. *Offered through Continuing Education for Women*

Math 1221 CALCULUS II. 5 credits, §1321, 1421, tuition*: Resident \$350; Non-resident \$1015. (IS)

A continuation of the course described under 1211. May be used to replace 1252. (Prereq grade of C or better in 1211. Limited to 35)

Fall Qtr, ★Sec 1, MW, 6:10-8:15, VinH 16
 Fall Qtr, ★Sec 2, TTh, 6:10-8:15, AkerH 313
 Winter Qtr, ★Sec 3, MW, 6:10-8:15, VinH 209
 Winter Qtr, ★Sec 4, TTh, 6:10-8:15, VinH 6
 Spring Qtr, ★Sec 5, MW, 6:10-8:15, VinH 20
 Spring Qtr, ★Sec 6, MW, 6:30-8:35, Roseville Area HS 145
 Spring Qtr, ★Sec 7, TTh, 6:10-8:15, VinH 16

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Math 1241 LINEAR AND NONLINEAR MULTIVARIABLE ANALYSIS I. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Linear algebra, geometry, and linear transformations in two, three, and more generally n -dimensional space; curves; limits and continuity in the multi-variable setting. May be used to replace 1261. (Prereq grade of C or better in 1221. Limited to 35)

Fall Qtr, ★Sec 1, MW, 6:10-8:15, VinH 2

Fall Qtr, ★Sec 2, TTh, 6:10-8:15, VinH 2

Winter Qtr, ★Sec 3, MW, 6:10-8:15, VinH 2

Winter Qtr, ★Sec 4, TTh, 6:10-8:15, VinH 113

Spring Qtr, ★Sec 5, TTh, 6:10-8:15, VinH 314

Math 1251 ONE VARIABLE DIFFERENTIAL AND INTEGRAL CALCULUS I. 4 credits, §1211, §1551H, §1411H, tuition*: Resident \$280; Non-resident \$812. (IS)

Calculus of functions of one variable and related geometry and applications. (Prereq 4 years of high school math and math placement score, 1201 with grade of C or better, or 1111 and 1008 with grade of C or better. Limited to 30)

Winter Qtr, ★Sec 1, TTh, 6:30-8:20, Richfield HS 142

Spring Qtr, ★Sec 2, MW, 6:10-8, AkerH 309

Math 1252 ONE VARIABLE DIFFERENTIAL AND INTEGRAL CALCULUS II. 4 credits, §1221, §1552H, §1421H, tuition*: Resident \$280; Non-resident \$812. (IS)

A continuation of the course described under 1251. (Prereq grade of C or better in 1251. Limited to 30)

Fall Qtr, ★Sec 1, MW, 6:10-8, VinH 113

Winter Qtr, ★Sec 2, MW, 6:30-8:20, Roseville Area HS 145

Spring Qtr, ★Sec 3, TTh, 6:30-8:20, Richfield HS 142

Math 1261 THE ALGEBRA AND GEOMETRY OF EUCLIDEAN SPACE. 4 credits, §1241, §3142, §3211, §3221, tuition*: Resident \$280; Non-resident \$812.

Vectors and their operations, matrices and matrix algebra, linear algebraic equations, Gaussian elimination, determinants and their applications, linear transformations, subspaces, quadratic forms, rigid motions, and orthogonal matrices. (Prereq 1251 or equivalent. Limited to 30)

Fall Qtr, ★Sec 1, TTh, 6:10-8, AkerH 215

Spring Qtr, ★Sec 2, MW, 6:10-8, AkerH 313

Math 3221 INTRODUCTION TO LINEAR ALGEBRA AND LINEAR DIFFERENTIAL EQUATIONS. 5 credits, §3066, 3142, 3511, tuition*: Resident \$412.50; Non-resident \$1196.25. (IS)

Vectors, systems of linear equations, matrices, determinants, bases, eigenvalues. Linear differential equations and systems with constant coefficients, initial value problem and general solutions, variation of parameters for inhomogeneous equations. This course is for students who have not had a course in linear algebra such as 1241 or 3142. (Prereq grade of C or better in 1221 or equivalent. Limited to 30)

Fall Qtr, ★Sec 1, MW, 6:10-8:15, VinH 206

Math 3251 MULTIVARIABLE DIFFERENTIAL CALCULUS. 4 credits, §3211, §3311, §3521H, §3552H, tuition*: Resident \$330; Non-resident \$957.

Differentiation of parametric curves. Partial differentiation and the derivative as a local linear approximation. The chain rule. Applications to max/min problems with attention to boundaries and constraints including Lagrange multipliers. Taylor's theorem (multivariable) and the second derivative test. (Prereq 1261. Limited to 30)

Winter Qtr, ★Sec 1, TTh, 6:10-8, AkerH 319

Math 3311 LINEAR AND NONLINEAR MULTIVARIABLE ANALYSIS II. 5 credits, tuition*: Resident \$412.50; Non-resident \$1196.25.

Differentiation, extreme values, and integration of functions of several variables. May be used to replace 3251. (Prereq grade of C or better in 1241. Limited to 35)

Fall Qtr, ★Sec 1, MW, 6:10-8:15, VinH 311

Fall Qtr, ★Sec 2, TTh, 6:10-8:15, VinH 311

Winter Qtr, ★Sec 3, MW, 6:10-8:15, VinH 311

Winter Qtr, ★Sec 4, TTh, 6:10-8:15, VinH 311

Spring Qtr, ★Sec 5, MW, 6:10-8:15, VinH 311

Spring Qtr, ★Sec 6, TTh, 6:10-8:15, VinH 311

Math 3321 DIFFERENTIAL EQUATIONS AND GENERAL VECTOR SPACES. 5 credits, §3066, 3142, 3212, 3511H, tuition*: Resident \$412.50; Non-resident \$1196.25.

Vector spaces, especially vector spaces of functions; linear transformations and eigenvalues; first order differential equations; linear differential equations and linear differential systems. *May be used to replace 3261.* (Prereq grade of C or better in 1241 or 3311 or equivalent)

Fall Qtr, Sec 1, TTh, 6:10-8:20, VinH 207

Winter Qtr, Sec 2, MW, 6:10-8:20, VinH 211

Winter Qtr, Sec 3, TTh, 6:10-8:20, VinH 211

Spring Qtr, Sec 4, MW, 6:10-8:20, VinH 211

Spring Qtr, Sec 5, TTh, 6:10-8:20, VinH 211

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Math 3331 INFINITE SEQUENCES AND SERIES; VECTOR INTEGRAL CALCULUS. 5 credits, \$1231, \$1431H, tuition*: Resident \$412.50; Non-resident \$1196.25.

Convergence issues and calculational techniques for infinite sequences and series; line and surface integrals, the divergence theorem and the theorems of Green and Stokes. *May be used to replace 3252.* (Prereq 3311 or equivalent. Limited to 30)

Winter Qtr, ★Sec 1, TTh, 6:10-8:20, VinH 2
Spring Qtr, ★Sec 2, MW, 6:10-8:20, VinH 2

Math 5056 THEORY OF INTEREST. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Application of compound interest formulas to annuities, sinking funds, bonds, and similar items. Primarily for mathematics and business majors interested in actuarial science. (Prereq 1241 or equivalent. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, ★Sec 1, Th, 6:10-9, VinH 207

Math 5082 FUNDAMENTALS OF ALGEBRA. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Number theory including fundamental theorem of arithmetic and congruences; at least one general algebraic structure (group ring or field); equivalence relations; possibly other topics. Proofs by mathematical induction and by contradiction. **No 5xxx-level credit for math majors.** (Prereq 3511 or 3142 or 3221 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★Sec 1, W, 6:10-9, VinH 6

Math 5090 CALCULUS REFRESHER. 5 credits, tuition*: Resident \$412.50; Non-resident \$1196.25; Resident Graduate credit \$495; Non-resident Graduate credit \$990; Resident Graduate School credit \$855; Non-resident Graduate School credit \$1710.

A course designed for students who have already had calculus, but who have been away from it for a while and need a quick review. This course will cover the topics of a standard course in calculus of one variable: differentiation of elementary functions, differentials, the definite integrals, techniques of integrations, applications of integration, polar coordinates, infinite series, approximation. **May be taken S-N.** (Prereq 1 year calculus. Qualified students may register for graduate credit at the University of Minnesota, except for mathematics majors. Limited to 40)

Fall Qtr, ★Sec 1, TTh, 6:10-9, VinH 113
Winter Qtr, ★Sec 2, MW, 6:10-9, VinH 113
Spring Qtr, ★Sec 3, MW, 6:10-9, VinH 113

Math 5242-5243 LINEAR ALGEBRA WITH APPLICATIONS. 4 credits each quarter, tuition* each quarter: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Systems of linear equations, finite dimensional linear spaces, bases, linear transformations, matrices, determinants, eigenvalues, reduction to canonical forms, quadratic and bilinear forms, applications. (Prereq 3221 or 3142 or 3511 or equivalent. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, 5242, Sec 1, M, 6:10-9, VinH 6
Winter Qtr, 5243, Sec 1, M, 6:10-9, VinH 6

Math 5245 INTRODUCTION TO MODERN ALGEBRA I. 4 credits, \$5282, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Basic algebra course, a more concrete level than 5282-5283-5284. Group theory including normal subgroups, homomorphism, automorphism, the theory of Lagrange and rings and fields. Linear algebra including rings, polynomial rings and fields. Linear algebra including an abstract approach to vector spaces and their linear transformations, and their structure. (Prereq 3321, 3221, 3511H, or equivalent. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Spring Qtr, ★Sec 1, M, 6:10-9, VinH 6

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Math 5606-5607-5608 ADVANCED CALCULUS: A RIGOROUS APPROACH. 4 credits each quarter, tuition* each quarter: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

A basic analysis course at a more concrete level than 5612-5613-5614. Foundations of analysis: completeness of the line, limits, convergence, continuity, integration. Analysis on the line and in Euclidean space. Other topics of the instructor's choice. (Prereq 3211-3212-3213 or 3511-3512-3513 or 3411-3421 or equivalent. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, 5606, Sec 1, T, 6:10-9, VinH 206

Winter Qtr, 5607, Sec 1, T, 6:10-9, VinH 207

Spring Qtr, 5608, Sec 1, T, 6:10-9, VinH 207

Math 5679 PROBABILITY. 4 credits, \$5681, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Elementary principles of probability, total and compound probability, expectation, repeated trials, and topics chosen from the following: Stirling formula, the probability integral, geometrical probability, probability of causes, Bayes theorem, errors of observation, principle of least squares. (Prereq 3211 or equivalent. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, Th, 6:10-9, VinH 207

Mathematics Education (MthE)

(125 Peik Hall: 625-6372)

College of Education

(Department of Curriculum and Instruction)

Textbooks for most MthE courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Peggy A. House, Professor

Robert Jackson, Professor

Robert Orton, Associate Professor

Thomas Post, Professor

James E. Stochl, Professor

These courses are subject to frequent changes in time and rooms. Check for correct day, time, and room in a day school class schedule.

Master's Degree—A Master of Education degree with a focus in Teacher Leadership is available through the departments of Curriculum and Instruction and Educational Policy and Administration. For more information, see page 482.

Enrollments in limited classes in this department are strictly enforced. Neither the department nor the course instructor will give written permission for registration in these classes once the limit is reached and the class closes. However, you may check for openings in day school.

MthE 5101 WORKSHOP: ELEMENTARY SCHOOL MATHEMATICS. 1-12 cr (max 12 cr). This offering 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Modern trends, methods, and materials used to convey mathematical ideas. Not open to majors in mathematics education. **Must be taken A-F.** (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★○Sec 1, Sa, 9 a.m.-12, PeikH 375,
Stochl

Spring Qtr, ★○Sec 2, W, 4:30-7:15, PeikH 375,
Stochl

MthE 5170 TEACHING PROBLEM SOLVING, REASONING, AND PROOF. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Fundamental concepts and principles of problem solving, reasoning, and proof. Emphasis on activities and applications appropriate for junior and senior high classes. Pedagogical experiences to prepare teachers to teach problem solving, reasoning, and proof in classrooms. **Must be taken A-F.** (Prereq mathematics education or grad student or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★○Sec 1, M, 4:30-7:15, PeikH 375,
Orton

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

MthE 5171 TEACHING PROBABILITY AND STATISTICS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Fundamental concepts and principles of probability. Emphasis on activities and applications appropriate for junior and senior high school classes. Pedagogical experiences to prepare teachers to integrate quantitative literacy accurately and effectively in classrooms. **Must be taken A-F.** (Prereq mathematics education or grad student or #; at least one math course in probability or statistics or combinatorics recommended. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students) Winter Qtr, ★●Sec 1, Th, 4:30-7:15, PeikH 375

MthE 5172 HISTORICAL TOPICS IN THE MATHEMATICS CLASSROOM. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Historical underpinnings of school mathematics content and methodology, cross-cultural contributions in the development of mathematical ideas; development of lessons, activities, and materials for school use. **Must be taken A-F.** (Prereq mathematics education or grad student or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students) Fall Qtr, ★●Sec 1, Th, 4:30-7:15, PeikH 375, Jackson

MthE 5311 TEACHING AND SUPERVISION OF MATHEMATICS IN THE ELEMENTARY SCHOOL. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Present practices and trends in methods, evaluation, and diagnosis; objectives, psychology, and philosophy related to improvement of instruction. **Must be taken A-F.** (Prereq Elem 3391 or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 5312. A joint Day/Extension class limited to 3 Extension students)

Fall Qtr, ★●Sec 1, T, 4:30-7:15, PeikH 375, House

MthE 5312 TEACHING AND SUPERVISION OF MATHEMATICS IN THE SECONDARY SCHOOL. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Methods, materials, and curriculum development; principles of learning; review of research; preparation and evaluation of tests, units, and materials of instruction. **Must be taken A-F.** (Prereq mathematics teaching experience or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 5311. A joint Day/Extension class limited to 3 Extension students)

Fall Qtr, ★●Sec 1, T, 4:30-7:15, PeikH 375, House

MthE 5313 TEACHING AND SUPERVISION OF MATHEMATICS IN THE MIDDLE SCHOOL. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Mathematics objectives, concepts and principles, skills and processes; instructional alternatives including calculators and microcomputers; applications of mathematics to individual differences; evaluation techniques to improve instruction and learning in middle school. **Must be taken A-F.** (Prereq elementary or secondary school licensure. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★●Sec 1, Th, 4:30-8, PeikH 375, Post

MthE 5322 MATERIALS LABORATORY FOR SECONDARY SCHOOL MATHEMATICS INSTRUCTION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Sources and types of materials; laboratory projects and techniques of using mathematics devices and instruments, visual aids, and community resources. (Prereq 5312 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★●Sec 1, T, 4:30-7:15, PeikH 375

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

MthE 5331 CURRENT DEVELOPMENTS IN ELEMENTARY SCHOOL MATHEMATICS INSTRUCTION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Contemporary literature, trends and experimentation with content; criteria for program evaluation. **Must be taken A-F.** (Prereq 5312 or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 5332. A joint Day/Extension class limited to 3 Extension students) Spring Qtr, ★●Sec 1, T, 4:30-7:15, PeikH 375, House

MthE 5332 CURRENT TRENDS AND ISSUES IN SECONDARY SCHOOL MATHEMATICS INSTRUCTION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Recent developments in mathematics curriculum and instructional alternatives; issues in teaching and learning, providing for special student needs; program planning and evaluation. **Must be taken A-F.** (Prereq 5213 or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 5331. A joint Day/Extension class limited to 3 Extension students)

Spring Qtr, ★●Sec 1, T, 4:30-7:15, PeikH 375, House

MthE 5355 MATHEMATICS FOR SLOW LEARNING CHILDREN. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Units of instruction emphasizing mathematical concepts essential for vocational competence; experimental materials and methods designed to improve performance of low achievers. (Prereq 5311 or Elem 3391 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★●Sec 1, M, 4:30-7, PeikH 375, Jackson
Spring Qtr, ★●Sec 2, T, 4:30-7:15, PeikH 155

Day School Classes—In addition to the Extension Classes listed above, day school classes are sometimes offered to educators during late afternoon, early evening, and weekend hours. For registration information about day school College of Education courses, see page 148 or call 625-6501.

Mechanical Engineering (ME)

(121 Mechanical Engineering: 625-5842)

Institute of Technology

Textbooks for most ME courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Your attention is called to the Undergraduate Development Certificate in Mechanical Engineering—95 credits, page 496.

Students interested in degrees and certificates in Mechanical Engineering should see the Degrees and Certificates section of this Bulletin.

Sant Ram Arora, Professor
Tasfahun Berhe, Lecturer
Arthur G. Erdman, Professor
Darrell A. Frohrib, Professor
Yevsey Gutman, Lecturer
Virgil A. Marple, Professor
Richard Pluntz, Lecturer
J.W. Ramsey, Professor
Ephraim M. Sparrow, Professor
Paul J. Strykowski, Associate Professor

Through registration in Extension Classes, students may earn all but approximately 24-30 credits towards a Bachelor's degree in Mechanical Engineering. The degree may then be completed after a limited amount of day school attendance or through University-Industry Television for Education (UNITE). **Students who plan to complete a degree program in Mechanical Engineering must follow the admission and residency requirements of the Institute of Technology.** (See chart on page 478.)

A student may not transfer upper division courses into the M.E. degree program unless he or she previously has been admitted to the Upper Division in the Mechanical Engineering curriculum and has the written prior approval of the department. *Extension courses taken while a student is on academic probation may not be applied toward graduation requirements or removal of probationary conditions without the explicit prior permission of the Mechanical Engineering Scholastic Standards Committee.* It is the responsibility of the student to follow these rules.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Mechanical Engineering. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

ME 0001C REFRESHER COURSE FOR MECHANICAL ENGINEERS. No credit, tuition*: \$210.

Review of mechanical engineering fundamentals in preparation for Minnesota Professional Engineering Examination. Designed to assist the mechanical engineer to prepare for the examination by presenting an organized review of topics in the mechanical engineering program. Emphasis is on problem solving, organization of information and notes, and trial examinations. **Must be taken S- N.** (No prereq)

Winter Qtr, Sec 1, Th, 6:10-8:40, Arch 60, Pluntz

ME 1025 (formerly EG 1025) ENGINEERING GRAPHICS. 4 credits, §EG 1025, tuition*: Resident \$280; Non-resident \$812. (IS)

Engineering representation in pictorial and multiview; sketching techniques, size description, standard and simplified practices applied to graphical communication. Analysis of systems of projection; correlation of graphical, numerical, and computer solutions of space problems, intersections, and development. Methods of computer-aided graphics. *Textbooks plus supplies for this course cost approximately \$100.* (Prereq Math 1251 or equivalent. Limited to 50)

Fall Qtr, ★Sec 1, M, 6:10-9:30, Arch 10, Berhe

Spring Qtr, ★Sec 2, M, 6:10-9:30, Arch 10, Berhe

ME 3201 MECHANICAL ENGINEERING SYSTEMS ANALYSIS. 4 credits, §AEM 3401, tuition*: Resident \$330; Non-resident \$957.

Determination of response of engineering systems utilizing transfer function representation. Analogies between engineering systems based upon transfer function equivalence. (Prereq AEM 3036, upper division MechE or AEM major, or practicing professional with bachelor's degree in engineering. Limited to 60)

Spring Qtr, ★Sec 1, W, 6:10-9:30, MechE 221

ME 3203 ANALYSIS OF MECHANISM SYSTEMS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Diagnostics of the performance of mechanism systems involving linkage, hydraulic, pneumatic, and electro-mechanical components. Energy balance techniques used to describe energy flow through machine systems. Preparation should include basic dynamics. (Prereq AEM 3036, upper division MechE or AEM major, ME 3020, or practicing professional with bachelor's degree in engineering)

Fall Qtr, Sec 1, W, 6:10-9:30, Arch 10

ME 3205 ENGINEERING SYSTEMS DESIGN. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Application of fundamental concepts to the design of typical mechanical components. Engineering approach to the analysis and synthesis of machines and systems. Specification of materials in engineering design. Optimum design criteria. (Prereq AEM 3016, upper division MechE major, or practicing professional with bachelor's degree in engineering)

Winter Qtr, Sec 1, W, 6:10-9:30, Arch 50

ME 3301 THERMODYNAMICS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Properties, equations of state, processes and cycles for various thermodynamic systems. Development of first and second laws of thermodynamics, correlating heat, work and mass transfer. Equilibrium, irreversibility and mixtures. Necessary preparation, introductory thermodynamics and basic calculus. (Prereq Chem 1052 or equivalent or Phys 1253 and Math 3261 or equivalent. Limited to 45)

Fall Qtr, ★Sec 1, T, 6:10-9:30, Arch 40

ME 3303 APPLIED THERMODYNAMICS. 4 credits, §3305, tuition*: Resident \$330; Non-resident \$957.

Application of laws of thermodynamics to chemically reacting systems and engineering systems. Vapor cycles, gas engine cycles, propulsion systems, refrigeration and air-water vapor mixtures. (Prereq 3301 or equivalent, upper division MechE or AEM major, or practicing professional with bachelor's degree in engineering. Limited to 45)

Winter Qtr, ★Sec 1, T, 6:10-9:30, Arch 55

ME 3701-3702 BASIC MEASUREMENTS LABORATORY I AND II. 2 credits each quarter, tuition* each quarter: Resident \$165; Non-resident \$478.50.

Treatment of experimental data, analysis and study of experimental systems via the computer. Static and dynamic characteristics of measurement systems. Fundamental principles of measurement and calibration. Measurement of temperature, pressure, vacuum, humidity, density, viscosity, heating values, speed, power, force, stress-strain, and radioactivity. Courses meet concurrently. (Prereq 3301 and upper division MechE major for 3701; 3701 and upper division MechE major for 3702. 1 lect and 2 lab hrs per wk. Each section limited to 30)

Spring Qtr, 3701, ★Sec 1, Th, 6:30-9:30, Arch 50

Spring Qtr, 3702, ★Sec 1, Th, 5:30-8:30, Arch 40

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

ME 3741-3742-3743 INDUSTRIAL ASSIGNMENT. 2 credits each quarter, tuition* each quarter: Resident \$165; Non-resident \$478.50.

Industrial work assignment in engineering co-op program. Evaluation based on formal written report accomplished by the student covering the quarter's work assignment and self-study in a technical area related to the work assignment. **Note:** 3743 is an optional substitute for only one of the required courses ME 5741 or 5742. (Prereq registration in Engineering Co-op Program with written permission of the director of the co-op program for 3741; 3741 for 3742. A joint Day/Extension class)

Fall Qtr, 3741, ⓪Sec 1, Arr, Marple

Fall Qtr, 3742, ⓪Sec 1, Arr, Marple

Fall Qtr, 3743, ⓪Sec 1, Arr, Marple

Winter Qtr, 3741, ⓪Sec 2, Arr, Marple

Winter Qtr, 3742, ⓪Sec 2, Arr, Marple

Winter Qtr, 3743, ⓪Sec 2, Arr, Marple

Spring Qtr, 3741, ⓪Sec 3, Arr, Marple

Spring Qtr, 3742, ⓪Sec 3, Arr, Marple

Spring Qtr, 3743, ⓪Sec 3, Arr, Marple

ME 3900 INTRODUCTION TO ENGINEERING STATISTICS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Elements of probability, descriptive statistics, binomial and Poisson distributions; normal distribution, estimation, hypothesis testing, regression analysis and analysis of variance. (Prereq Math 1261 or equivalent)

Fall Qtr, Sec 1, W, 6:10-9:10, MechE 221

ME 5225 FINITE ELEMENTS IN MECHANICAL DESIGN. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Introduction to the fundamentals of finite element analysis, oriented toward mechanical engineering design applications. Includes extensive examples from industry and student projects involving actual set-up and solution of descriptive problems using industry-accepted analysis codes and interactive graphics for model generation. **Must be taken A-F.** (Prereq 3205, 5342 and programming; IT or grad. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, M, 4:15-7, MechE 18

ME 5254 DESIGN MORPHOLOGY WITH APPLICATIONS. 4 credits. **Tentatively scheduled for Summer 1994.**

ME 5342 HEAT TRANSFER. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Steady and unsteady conduction of heat. Convection heat transfer in boundary layer and duct flows; forced and free convection; condensation and boiling; heat exchangers. Heat transfer by thermal radiation; radiative properties of black bodies and real surfaces. (Prereq 3301, CE 3400 or AEM 3200, IT upper div or grad, or equivalent. Not open for graduate credit to M.E. students. Other qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, T, 6:10-9:30, MechE 221,

Sparrow

ME 5344 THERMODYNAMICS OF FLUID FLOW. 4 credits, \$AEM 5201, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Compressible flow of gases in engineering systems such as noHles, ducts, combustion chambers, ramjets, pipe lines, etc. Isentropic flow in variable area passages. Shock waves. Flow with wall friction, heat transfer, and mass transfer. (Prereq 3301 and CE 3400 or AEM 3200 or equivalent. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, T, 6:10-9:30, MechE 221,

Sparrow

ME 5603 THERMAL ENVIRONMENTAL ENGINEERING. 4 credits. **Tentatively scheduled for Fall 1994 and alternate years thereafter.**

ME 5712 SOLAR ENERGY UTILIZATION. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

History and potential of solar energy utilization; availability of solar radiation on clear and cloudy days; incident radiation on horizontal, vertical, and inclined surfaces; flat-plate and concentrating solar collectors; heating and cooling with solar energy; power generation; review of current research. (Prereq 3303, 5342 or equivalent. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, T, 6:10-9:10, Arch 10, Ramsey

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

ME 5741-5742 INDUSTRIAL ASSIGNMENT AND DESIGN PROJECT. 4 credits each quarter, tuition* each quarter: Resident \$330; Non-resident \$957.

Note: Evaluation and credit will be based upon a written report describing a design-oriented project, preferably one that is work based. (Prereq 3742 and #. May not be taken for graduate credit. A joint Day/Extension class)

Fall Qtr, 5741, ⓪Sec 1, Arr, Marple
 Fall Qtr, 5742, ⓪Sec 1, Arr, Marple
 Winter Qtr, 5741, ⓪Sec 2, Arr, Marple
 Winter Qtr, 5742, ⓪Sec 2, Arr, Marple
 Spring Qtr, 5741, ⓪Sec 3, Arr, Marple
 Spring Qtr, 5742, ⓪Sec 3, Arr, Marple

ME 5990 TOPICS IN MECHANICAL ENGINEERING: APPLICATIONS OF DESIGN OPTIMIZATION TO MULTI-DEGREE OF FREEDOM SYSTEMS. 4 credits (may be repeated for credit), tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Specialized topics within various areas of mechanical engineering. Emphasis on topics of current interest. Topics vary from quarter to quarter. (Prereq submission of approved department permission form, #; IT upper division or graduate student. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Fall Qtr, ★Sec 1, MW, 4:15-6, MurH 311, Gutman

Medical Terminology

(See Health Science Units, page 215)

Medieval Studies (MeSt)

(304 Walter Library: 626-0805)

College of Liberal Arts

Center for Medieval Studies

Textbooks for most MeSt courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Oliver Nicholson, Assistant Professor of
 Classical and Near Eastern Studies

MeSt 5610 INTRODUCTION TO BYZANTINE CIVILIZATION. 4 credits, §Clas 1061, 5061, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Greco-Roman backgrounds of Byzantine civilization. Culture of the Eastern Empire through the study of history, religion, education, art, literature in translation. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Clas 1061, 5061)

Fall Qtr, Sec 1, T, 6:20-8:50, FolH 138, Nicholson

Medicine

For information on noncredit conferences or workshops in medicine, please contact Office of Continuing Medical Education, Radisson Hotel Metrodome; telephone 626-7600.

(See also History of Medicine)

Microbiology (MicB)

(1460 Mayo: 624-6190)

Medical School

Textbooks for most MicB courses are available at the Health Sciences Bookstore (625-8600).

Russell Bey, Associate Professor
 Thomas Molitor, Associate Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in MicB. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

MicB 3103 GENERAL MICROBIOLOGY. 5 credits, §5105, §Biol 5013, §VPB 3103, tuition*: Resident \$640; Non-resident \$1856.

Morphology, physiology, taxonomy, and ecology of bacteria and other microorganisms. General biology of microorganisms. Practical applications of fundamental principles to industry, agriculture and health. (Prereq sophomore with C avg in prereq courses to major sequence or junior with 10 cr in chemistry and 5 cr in biological sciences or #. Microscope required. [Inquire at first class meeting about rental.]

Fall Qtr, Sec 1, Lect TTh, 6:15-7:45, MoosT 2-690;
 Lab TTh, 7:45-10, MoosT 2-252, Bey

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

MicB 5218 IMMUNOLOGY. 3 credits, tuition*: Resident \$384; Non-resident \$1113.60; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Cellular, protein, and genetic bases of humoral immunity; methods used to measure antibodies and antigens. T lymphocytes: interaction of T helper cells with B lymphocytes and other T cells in cell-mediated immunity. Clinical immunology: immunodeficiency, allergy, autoimmunity, transplantation. (Prereq Biol 5001. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, T, 6:15-8:45, MoosT 2-530, Molitor

Middle Eastern Languages and Cultures

(See Area Studies Programs; and the Institute of Languages and Literatures)

Military Science (Mil)

(110 Armory: 624-7300)

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Military Science. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Minnesota Courses

(For courses about the State of Minnesota, see the following departments: History; Geography; The Compleat and Practical Scholar noncredit courses; and Compleat Scholar Weekends)

Minnesota Extension Service

Minnesota Extension Service (MES) is a major educational outreach arm of the University of Minnesota. Its mission is to involve people in improving the quality of life and enhancing the economy and the environment through education, applied research and the resources of the University of Minnesota.

In its 80-plus years of service to Minnesotans, MES continues to direct and define its programs by the changing issues facing citizens and what they ask of their land-grant university to help them deal with those issues. MES extends the University by a network of faculty in every county, expedited by a statewide computer and satellite downlink system;

over 30,000 volunteers; and by collaborative relationships with other agencies and organizations—schools, churches, human services, local governments—to help identify, prioritize, and meet individual and community educational needs.

For general information, call the Dean and Director's office (624-1222); for information on insect and plant problems, call DIAL U, a user fee service (off-campus, 1-976-0200; secretary, 624-5353); for other information, call your local county extension office.

Minnesota Studies in International Development (MSID)

Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

Modern Greek

(See Classical Studies)

Music (Mus)

(100 Ferguson Hall: 624-5740)

College of Liberal Arts

Most textbooks for Mus courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also music courses in General College; Music Education; MacPhail Center for the Arts; and The Compleat Scholar noncredit courses)

John E. Anderson, Professor of Music
Mark P. Bjork, Assistant Professor of Continuing Education

David Damschroder, Associate Professor of Music
James Hepokoski, Professor of Music
Peter S. Mensah, Teaching Specialist in Musicology

Stephen Schultz, Associate Professor of Music Education
Clifton Ware, Associate Professor of Music

Noncredit Courses—Applicants who wish to enroll for noncredit instruction in applied music should contact the MacPhail Center—telephone 627-4020—for information about availability of instruction, and tuition and fee costs.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Music. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Mus 1051-1052-1053 PIANO CLASS FOR NON-MUSIC MAJORS. 2 credits each quarter, tuition* each quarter: Resident \$140; Non-resident \$406.

A beginning course for non-music majors with little or no keyboard background. Emphasis on functional skills, such as reading, harmonizing, playing by ear and improvising, along with basic technique and elementary repertoire. (No prereq for 1051; 1051 for 1052; 1052 for 1053. Limited to 16)

Fall Qtr, 1051, ★Sec 1 M, 6:15-8:15, FergH 259

Fall Qtr, 1051, ★Sec 2, T, 6:15-8:15, FergH 259

Fall Qtr, 1051, ★Sec 3, TTh, 3:35-4:25, FergH 259

Fall Qtr, 1051, ★Sec 4, TTh, 4:40-5:30, FergH 259

Fall Qtr, 1052, ★Sec 1, MW, 3:35-4:25, FergH 259

Winter Qtr, 1051, ★Sec 5, M, 6:15-8:15, FergH 259

Winter Qtr, 1052, ★Sec 2, MW, 3:35-4:25, FergH 259

Winter Qtr, 1052, ★Sec 3, T, 6:15-8:15, FergH 259

Winter Qtr, 1051, ★Sec 6, TTh, 3:35-4:25, FergH 259

Winter Qtr, 1051, ★Sec 7, TTh, 4:40-5:30, FergH 259

Spring Qtr, 1051, ★Sec 8, M, 6:15-8:15, FergH 259

Spring Qtr, 1052, ★Sec 4, MW, 3:35-4:25, FergH 259

Spring Qtr, 1053, ★Sec 1, T, 6:15-8:15, FergH 259

Spring Qtr, 1053, ★Sec 2, T, 6:15-8:15, FergH 265 (Limit 12)

Spring Qtr, 1051, ★Sec 9, TTh, 3:35-4:25, FergH 259

Spring Qtr, 1051, ★Sec 10, TTh, 4:40-5:30, FergH 259

Mus 1151-1152-1153 PIANO: CLASS LESSONS. 2 credits each quarter, tuition* each quarter: Resident \$140; Non-resident \$406.

Keyboard skills in harmonization, improvisation, sight-reading, accompaniment, repertoire, technique. Group learning. (Prereq music major or #. Limited to 16)

Fall Qtr, 1153, ★Sec 1, W, 6:15-8:15, FergH 259

Winter Qtr, 1151, ★Sec 1, W, 6:15-8:15, FergH 259

Spring Qtr, 1152, ★Sec 1, W, 6:15-8:15, FergH 259

Mus 1160 VOICE: CLASS LESSONS. 2 credits, tuition*: Resident \$140; Non-resident \$406.

Fundamentals of healthy voice production in speaking and singing—posture, relaxation, breathing/breath management, tone placement, diction and vocal hygiene. Vocal Performance skills learned in the study and performance of simple songs. (Prereq ability to learn and perform simple songs. Limited to 16)

Fall Qtr, ★Sec 1, M, 6:15-8:15, FergH 90, Ware

Winter Qtr, ★Sec 2, M, 6:15-8:15, FergH 90, Ware

Spring Qtr, ★Sec 3, M, 6:15-8:15, FergH 90, Ware

Mus 1171-1172 GUITAR: CLASS LESSONS. 2 credits each quarter, tuition* each quarter: Resident \$140; Non-resident \$406.

Fundamentals for the beginning guitarist. Progressive development of skills. **1171:** basic strumming techniques, harmonizations in basic keys. **1172:** advanced strumming techniques, bass runs, finger-picking strums. Students must furnish own guitar. (No prereq for 1171; 1171 or # for 1172; 1171 and 1172 meet concurrently)

Fall Qtr, 1171, ★Sec 1, T, 6:15-8:15, FergH 123

Fall Qtr, 1172, ★Sec 1, T, 6:15-8:15, FergH 123

Winter Qtr, 1171, ★Sec 2, T, 6:15-8:15, FergH 123

Winter Qtr, 1172, ★Sec 2, T, 6:15-8:15, FergH 123

Spring Qtr, 1171, ★Sec 3, T, 6:15-8:15, FergH 123

Spring Qtr, 1172, ★Sec 3, T, 6:15-8:15, FergH 123

Group performance

School of Music ensembles are available through joint Day/Extension enrollment. An audition should be arranged with the instructor in advance of the class opening. Telephone 624-5056 for information.

Music theory, history, literature, pedagogy

Mus 1001 FUNDAMENTALS OF MUSIC. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Investigation of music notation and fundamental concepts underlying musical structure. Intervals, clefs, chords, scales, cadences, harmonic analysis; rhythm and meter. Emphasis on active participation: playing the piano, singing, clapping rhythms, aural perception. Weekly laboratory assignments in vocal and piano performance. (No prereq. Limited to 35)

Fall Qtr, ★Sec 1, M, 6:15-9:45, FergH 107

Fall Qtr, ★Sec 2, Th, 6:15-9:45, FergH 107

Winter Qtr, ★Sec 3, T, 6:15-9:45, FergH 107

Winter Qtr, ★Sec 4, Th, 6:15-9:45, FergH 107

Spring Qtr, ★Sec 5, T, 6:15-9:45, FergH 107

Spring Qtr, ★Sec 6, Th, 6:15-9:45, FergH 107

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Mus 1003 INTRODUCTION TO MUSIC THEORY. 2 credits, tuition*: Resident \$140; Non-resident \$406.

Fundamental concepts of music theory and notation, including key signatures, scales, rhythm, and chordal construction. See Mus 1004 below; 1004 meets immediately after 1003. (Prereq music major or #) Winter Qtr, Sec 1, MTh, 6:15-7:05, FergH 123

Mus 1004 INTRODUCTION TO EAR TRAINING. 2 credits, tuition*: Resident \$140; Non-resident \$406.

Fundamental concepts of ear training and sight singing, with emphasis upon intervals, scales, and basic rhythmic patterns. See Mus 1003 above; 1003 meets immediately before 1004. (Prereq music major or #) Winter Qtr, Sec 1, MTh, 7:15-9, FergH 123

Mus 1507-1508 THEORY REVIEW I-II. 3 credits each quarter, tuition* each quarter: Resident \$210; Non-resident \$609.

Melodic and harmonic structure. See also Mus 1531, Theory I. **Must be taken A-F.** (Prereq placement exam)

Fall Qtr, 1507, Sec 1, TTh, 7:15-9, FergH 149

Winter Qtr, 1508, Sec 1, TTh, 7:15-9, FergH 149

Mus 1511 EAR-TRAINING AND SIGHT-SINGING I. 1 credit, tuition*: Resident \$70; Non-resident \$203. (IS)

Melodic, harmonic, and rhythmic dictation; sight-singing; clef-reading; musicianship drills. See also Mus 1531, Theory I. (No prereq. Concurrent registration with Mus 1531 required)

Spring Qtr, Sec 1, MTh, 6:15-7:05, FergH 123

Mus 1517-1518 EAR-TRAINING AND SIGHT-SINGING REVIEW I-II. 1 credit each quarter, tuition* each quarter: Resident \$70; Non-resident \$203.

Aural skills: sight-singing, interval recognition, melodic and harmonic dictation. See also Mus 1531, Theory I. **Must be taken A-F.** (Prereq placement exam)

Fall Qtr, 1517, Sec 1, TTh, 6:15-7:05, FergH 149

Winter Qtr, 1518, Sec 1, TTh, 6:15-7:05, FergH 149

Mus 1531 THEORY I: FOUNDATIONS OF TONAL THEORY. 3 credits, tuition*: Resident \$210; Non-resident \$609. (IS)

Two-part counterpoint (species approach); consonance and dissonance; melodic contours; review of music fundamentals. **Note:** Music theory courses and their corresponding ear-training labs (Mus 1511 and 1531; 1507 and 1517; 1508 and 1518) must be elected concurrently unless the student demonstrates profi-

ciency in one or the other area through the Music Theory Placement Exam, offered by the School of Music at the beginning of each term. *Call 624-5740 for exam date and time.* Mus 1511 and 1531 require prior exposure to music fundamentals. Students who have not completed 1003/1004 at the University must demonstrate their proficiency through a special Entrance Examination offered periodically throughout the year. *Call 624-5740 for dates and times.* (No prereq)

Spring Qtr, Sec 1, MTh, 7:15-9, FergH 123

Mus 1804 WORLD MUSIC. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Music in universal perspectives. Traits, distinguishing styles, and cultural factors that influence musical creativity. Music of different cultures compared to examine forms and traits, to develop listening abilities, and to develop an understanding of human musical expressions. (No prereq)

Winter Qtr, Sec 1, MW, 7:15-9:10, FergH 105, Mensah

Mus 3021 INTRODUCTION TO MUSIC. 5 credits, tuition*: Resident \$367.50; Non-resident \$1065.75

Introduction to music in the repertory of our culture, exploring selected forms and styles from the 17th through 20th centuries. Aural analyses, relationships of large units of musical form. (No prereq)

Fall Qtr, Sec 1, W, 6-10, FergH 105, Hepokoski

Winter Qtr, Sec 2, W, 6-10, FergH 105, Hepokoski

Spring Qtr, Sec 3, W, 6-10, FergH 105, Hepokoski

Mus 3700 AFRICAN MUSIC ENSEMBLE. 1 credit tuition*: Resident \$73.50; Non-resident \$213.15.

Performance of African Music repertoire. (Prereq #. Meets concurrently with Mus 5700)

Fall Qtr, Sec 1, F, 3:35-5:30, FergH 149, Mensah

Winter Qtr, Sec 2, F, 3:35-5:30, FergH 149, Mensah

Spring Qtr, Sec 3, F, 3:35-5:30, FergH 149, Mensah

Spring Qtr, Sec 3, F, 3:35-5:30, FergH 149, Mensah

Mus 3707 AFRICAN MUSIC. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Study of music in various African traditions in social and historical context. Interrelationships between music and society (function, context, structure, gender roles, political considerations). Instruments, life-cycle rites, genres, musical organization, traditional musicians, contemporary popular music. (No prereq)

Fall Qtr, Sec 1, MW, 7:15-9:10, FergH 105, Mensah

Spring Qtr, Sec 1, MW, 7:15-9:10, FergH 105, Mensah

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Mus 5150 BODY AWARENESS IN ACTIVITY: THE ALEXANDER TECHNIQUE FOR MUSICIANS. 2 credits each quarter, tuition*: Resident \$147; Non-resident \$426.30; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Introduction to the Alexander Technique with specific applications to music performance. Emphasis on body/mind awareness to promote technical ease and freedom. **May be repeated for credit.** (Prereq music major or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 12)

Fall Qtr, ★Sec 1, Th, 6:15-8:15, FergH 105

Winter Qtr, ★Sec 2, Th, 6:15-8:15, FergH 105

Spring Qtr, ★Sec 3, Th, 6:15-8:15, FergH 105

Mus 5321-5322-5323 (replaces 5950) SUZUKI VIOLIN PEDAGOGY. 2 credits each quarter, tuition* each quarter: Resident \$147; Non-resident \$426.30; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

An intensive examination of the philosophy and teaching techniques of Japanese pedagogue Shinichi Suzuki, and their applications in Western culture. Students will be involved with discussions, playing experience, and observations of children's lessons in the MacPhail Center Suzuki Program, 1128 LaSalle Ave. in downtown Minneapolis. **For information about the course, contact Mark Bjork at 625-3328.** (Prereq undergrad or grad string major with violin as principal performing instrument or #; 5321 for 5322; 5322 for 5323. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, 5321, ○Sec 1, W, 12:20-2:15, FergH 203, Bjork

Winter Qtr, 5322, ○Sec 1, W, 12:20-2:15, FergH 203, Bjork

Spring Qtr, 5323, ○Sec 1, W, 12:20-2:15, FergH 203, Bjork

Mus 5324-5325-5326 (replaces 5950) ADVANCED SUZUKI VIOLIN PEDAGOGY. 2 credits each quarter, tuition* each quarter: Resident \$147; Non-resident \$426.30; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

An intensive examination of techniques for the intermediate and advanced violin student using the techniques of Shinichi Suzuki in Western society. Class will involve discussion, playing experience, and observation of children's lessons in the MacPhail Center

Suzuki Program (1128 LaSalle Ave. in downtown Minneapolis) and practical teaching experience. **For information about the course, contact Mark Bjork at 625-3328.** (Prereq 5323 or equiv or # plus an audition for 5324; 5324 for 5325; 5325 for 5326. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, 5324, ○Sec 1, M, 12:20-2:15, FergH 203, Bjork

Winter Qtr, 5325, ○Sec 1, M, 12:20-2:15, FergH 203, Bjork

Spring Qtr, 5326, ○Sec 1, M, 12:20-2:15, FergH 203, Bjork

Mus 5700 AFRICAN MUSIC ENSEMBLE. 1 credit, tuition*: Resident \$73.50; Non-resident \$213.15; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Performance of African Music repertoire. (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Mus 3700)

Fall Qtr, Sec 1, F, 3:35-5:30, FergH 149, Mensah

Winter Qtr, Sec 2, F, 3:35-5:30, FergH 149, Mensah

Spring Qtr, Sec 3, F, 3:35-5:30, FergH 149, Mensah

Noncredit Music Classes at MacPhail Center for the Arts—Noncredit courses in music are offered at MacPhail Center for the Arts, 1128 LaSalle Ave., in downtown Minneapolis. *Registration is through MacPhail Center only; telephone 627-4020 for information and a copy of their bulletin.*

Music Education (MuEd)

(100 Ferguson Hall: 624-5740)

College of Liberal Arts

Textbooks for most MuEd courses available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

Robert Borg, Associate Professor
Charles Furman, Associate Professor
Paul Haack, Professor
Claire McCoy, Associate Professor
Stephen Schultz, Associate Professor

Enrollments in limited classes in this department are strictly enforced. Neither the department nor the course instructor will give written permission for registration in these classes once the limit is reached and the class closes.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

MuEd 5111 RESEARCH IN MUSIC EDUCATION: BIBLIOGRAPHY. 3 credits, tuition*: Resident \$220.50; Non-resident \$639.45; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Sources, materials, and techniques. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Th, 4:30-6:45, FergH 151, Schultz

MuEd 5112 RESEARCH IN MUSIC EDUCATION: TECHNIQUES. 3 credits, tuition*: Resident \$220.50; Non-resident \$639.45; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Methods and techniques employed in investigating and reporting of music education problems; review of significant research. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, Th, 4:30-6:45, FergH 151, Furman

MuEd 5115 RESEARCH IN MUSIC EDUCATION: MEASUREMENT. 3 credits tuition*: Resident \$220.50; Non-resident \$639.45; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Current status in music testing; principles; survey of evaluative, accountability, and testing materials in music. **Must be taken A-F.** (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ●Sec 1, Th, 4:30-6:45, FergH 107, McCoy

MuEd 5621 SUPERVISION AND ADMINISTRATION OF SCHOOL MUSIC. 3 credits, tuition*: Resident \$220.50; Non-resident \$639.45; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Analysis and evaluation of instructional, supervisory, and administrative techniques; readings, new trends. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, M, 4:30-6:30, FergH 157, Borg

MuEd 5655 NEW DIMENSIONS IN MUSIC EDUCATION. 3 credits, tuition*: Resident \$220.50; Non-resident \$639.45; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Study of contemporary music education through analysis of recent curricular trends and current issues. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, M, 4:30-6:45, FergH 157, Haack

MuEd 5666 MICROCOMPUTERS IN THE MUSIC CLASSROOM. 3 credits, tuition*: Resident \$220.50; Non-resident \$639.45; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Using the microcomputer to enhance instruction; materials for theory, ear training, composition, electronic music; developing a data base for music libraries, instrument inventories, budgets. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★●Sec 1, MWF, 9:05-9:55 a.m., FergH 113, Schultz

MuEd 5668 COMPUTERIZED MUSIC NOTATION. 3 credits, tuition*: Resident \$220.50; Non-resident \$639.45; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Fundamentals of music notation and printing utilizing the Macintosh computer. MIDI keyboards, and the Finale software program. Preparation of instrumental and vocal scores, part extraction, and page layout. **May be taken A-F or S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★●Sec 1, T, 6-9, FergH 113, Schultz

Winter Qtr, ★●Sec 1, M, 6-9, FergH 113, Schultz

Spring Qtr, ★●Sec 1, T, 6-9, FergH 113, Schultz

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

MuEd 5970 INDEPENDENT STUDY. 1-4 credits, tuition* each credit: Resident \$73.50; Non-resident \$213.15; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Independent study project organized by the student in consultation with the appropriate instructor. **Must be taken A-F.** (Prereq education or graduate student. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, **○**Sec 1, Arr, Borg, Furman, Haack, McCoy, Schultz

Winter Qtr, **○**Sec 2, Arr, Borg, Furman, Haack, McCoy, Schultz

Spring Qtr, **○**Sec 3, Arr, Borg, Furman, Haack, McCoy, Schultz

A wide variety of workshops in music education is available to local school districts who wish to jointly design a continuing education experience to meet unique local needs.

Day School Classes—In addition to the Extension classes listed above, day school classes are sometimes offered to educators during late afternoon, early evening, and weekend hours. For registration information about day school College of Education courses, see page 148 or call 625-6501.

For further information in regard to planning an individually designed workshop for a particular district or building staff contact: Chairman, Music Education Program, Ferguson Hall (West Bank), University of Minnesota, Minneapolis, MN 55455; or telephone 624-1091.

Also see MacPhail Center for the Arts courses on page 277.

Naval Science (Nav)

(203 Armory: 625-6677)

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in Naval Science. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before registration for that quarter begins.

Near and Middle Eastern Studies

(See Area Studies Programs, and the Institute of Languages and Literatures)

Neighborhood Centers

(See page 509)

Noncredit Classes

(See the Noncredit Courses section, page 367)

Norwegian

(See Scandinavian Languages)

Nursing (Nurs)

(6-101 Health Sciences Unit F: 624-9600)

School of Nursing

Textbooks for most Nurs courses are available at the Health Sciences Bookstore (625-8600).

Pat Camillo, Lecturer

Sara S. DeHart, Associate Professor

Bernadine Feldman, Associate Professor

Marilyne Gustafson, Assistant Professor

Kathleen Krichbaum, Assistant Professor

Robert McKinnell, Professor, Genetics and Cell Biology

Deborah Ringdahl, Associate Clinical Specialist

Muriel B. Ryden, Professor

Suzanne J. Schoenfelt, Instructor, College of Pharmacy

Mariah Snyder, Professor

Nurs 5944 SPECIAL EDUCATIONAL EXPERIENCES IN NURSING: CARE OF THE ELDERLY II: Psychosocial Concepts. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Offered via interactive television between two sites, with students at both locations. Examination of psychosocial theoretical concepts related to the care of aged persons. Exploration of assessment and research-based interventions with an emphasis on promotion and restoration of health and supportive care. **May be taken S-N.** (Prereq Human Development Across the Life Span course, #; RN for undergraduate credit; RN with baccalaureate degree for graduate credit. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 8 Extension students)

Fall Qtr, **★**Sec 1, W, 4:40-6:35, MoosT 5-125, DeHart, Ryden

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Nurs 5609 SPECIAL EDUCATIONAL EXPERIENCES IN NURSING: MENOPAUSE—A MULTIDIMENSIONAL APPROACH. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

A study of menopause through an exploration of the physiological, developmental, historical, socio-cultural, nursing, and medical interfaces associated with this uniquely female experience. Issues and research involving hormone replacement therapy will be addressed as well as alternative interventions. **May be taken S-N.** (Prereq for undergraduate credit: upper division student, baccalaureate degree, or R.N. Prereq for graduate credit: R.N. with baccalaureate degree. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 20 Extension students) Spring Qtr, ★○Sec 3, T, 4:40-6:35, HSUnitF 4-150, Camillo

Nurs 5634 WOMEN'S ISSUES: A HEALTH PERSPECTIVE. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Focuses on exploration and analysis of a wide range of women's health issues. Content includes a multidisciplinary analysis of sexual and reproductive health, victimization, poverty, work, nutrition, physical activity, body image, and mental health, with emphasis on health promotion. Open to both nursing students and non-nursing students. **May be taken S-N.** (Prereq upper division, graduate student, or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★○Sec 1, T, 4:40-7:40, HSUnitF, Ringdahl

Nurs 5640 COMMON RESPONSE PATTERNS TO ILLNESS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Exploration of theoretical and clinical perspectives of selected human response patterns found in disruptions in health. The course will provide students with an opportunity to examine nursing phenomena, such as pain or hopelessness, from the perspective of an

advanced nurse practitioner. **May be taken S-N.** (Prereq for undergraduate credit, R.N.; for graduate credit, R.N. with baccalaureate degree. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★○Sec 1, Th, 4:40-6:35 (plus 1 hr arr), HSUnitF 4-150, Snyder

Nurs 5642 BEHAVIORAL PROBLEMS IN PERSONS WITH DEMENTIA. 2 credits. **Offered alternate years. Tentatively scheduled for Spring 1995.**

Nurs 5650 THERAPEUTIC TOUCH: PRACTICE AND RESEARCH. 2 credits. **Offered alternate years. Tentatively scheduled for Winter 1995.**

Nurs 5660 BASIC MANAGEMENT IN LONG-TERM CARE FACILITIES: ORGANIZATION MANAGEMENT. 1-4 credits, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Provides a critical basis for the practice of management of nursing in long-term care facilities. Emphasis on analysis of management theory and its relevance to current practice. Course is divided into four modules: organization management; organization theory; regulation mechanisms; organization behavior. **Note: Students wishing to register for fewer than 4 credits must call 624-4866 for instructions.** Course is taught using interactive television (ITV) at three sites off campus.

Please indicate your location preference by section number on the registration form. May be taken S-N. (Prereq for undergraduate credit, R.N.; for graduate credit, R.N. with baccalaureate degree. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★○Sec 1, Th, 4:40-8:45, Capitol View Ctr, Roseville, Krichbaum

Fall Qtr, ★○Sec 2, Th, 4:40-8:45, Spring Lake Park HS, Spring Lake Park, Krichbaum

Fall Qtr, ★○Sec 3, Th, 4:40-8:45, Tartan HS, Oakdale, Krichbaum

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Nurs 5711 SPIRITUALITY AND NURSING PRACTICE. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Exploration of the concept of spirituality as integral to the whole person. Discussion of spiritual nursing care interventions within the context of the nursing process. **May be taken S-N.** (Prereq for undergraduate credit, R.N. with baccalaureate degree. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 20 Extension students)

Spring Qtr, ★○Sec 1, Th, 4:40-6:35, MechE 102, Gustafson

Nurs 5720 WRITTEN COMMUNICATION SKILLS FOR HEALTH PROFESSIONALS. 3 credits, §HSU 5017, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Students meet in workshop sessions where they critique the work of class participants. Throughout the course, emphasis is on organization, style, clarity of presentation, conciseness, accuracy, transitions, consistency, and writing mechanics. Students also examine journal articles, style, the work of professional authors, and other writing guidelines. Depending on the interest of class members, some emphasis will be placed on writing journal articles for publication. The course works best for students who are already in the process of writing or trying to publish a paper. The class serves as the structure for students to compose their own work. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with HSU 5017. Limited to a combined total of 15)

Winter Qtr, ★Sec 1, T, 4-6:30, MoosT 15-250, Schoenfelt

Nurs 5738 TRANSCULTURAL NURSING: THEORIES AND ISSUES. 2 or 3 credits, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Offered via interactive television between two sites, with students at both locations. Study of cultural factors which influence theories, issues, and nursing

care practice in diverse cultures and subcultures. Emphasis is on nursing within international systems of health care and on nursing practices related to various health-illness systems in this country and worldwide. **May be taken S-N.** (Prereq for undergraduate credit, R.N.; for graduate credit, R.N. with baccalaureate degree; cultural anthropology course or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 20 Extension students)

Fall Qtr, ★○Sec 1, Th, 4:40-6:35 (plus 1 hr arr), MoosT 5-125, Gustafson

Nurs 5881 THE BIOLOGY OF CANCER. 3 credits, §GCB 3008, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Biological aspects of etiology, phylogeny, and cellular processes involved in neoplasia. Growth and differentiation of normal and cancer cells. The history of cancer research. (Prereq Biol 1009. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with GCB 3008)

Spring Qtr, Sec 1, W, 6:30-9, BioSci 12, StP Campus, McKinnell

Nurs 5941 CARE OF THE ELDERLY I: PHYSIOLOGICAL CONCEPTS. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Offered via interactive television between two sites, with students at both locations. Exploration of functional patterns related to physiological aspects of aging; examination of research-based interventions used to maintain or restore optional functioning of elderly. **May be taken S-N.** (Prereq for undergraduate credit, R.N.; for graduate credit, R.N. with baccalaureate degree. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★○Sec 1, W, 5:45-7:40, MoosT 5-125, Snyder

Nurs 5944.

See page 279

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Nurs 5946 PROFESSIONAL ISSUES IN ADVANCED GERONTOLOGICAL NURSING PRACTICE ROLES. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Offered via interactive television between two sites, with students at both locations. Examination of professional and policy-related issues common to advanced practice roles including reimbursement, certification, professional relationships, standards of care, legislation, and regulation as they pertain to nurse practitioners, professional practice, the health care system, and the care of older adults. **May be taken S-N.** (Prereq minimum of 6 credits in Gerontological Nursing focus, #; RN for undergraduate credit; RN with baccalaureate degree for graduate credit. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 8 Extension students)

Winter Qtr, ★○Sec 1, W, 6:45-8:30, MoosT 5-125, Feldman

Nurs 5947 PHARMACOTHERAPEUTICS FOR THE ELDERLY. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Examines pharmacological actions of prescription and over-the-counter medications commonly used by aged persons. A major focus will be the recognition of and interventions for adverse drug effects, side effects, drug incompatibilities, and iatrogenic problems, as well as assessment of drug misuse and/or abuse. Therapeutic dosages for common chronic and acute health problems of the elderly will be examined. **May be taken S-N.** (Prereq for undergraduate credit, R.N.; for graduate credit, R.N. with baccalaureate degree. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 8 Extension students)

Winter Qtr, ★○Sec 2, W, 1:25-3:20, HSUnitF, DeHart, Camillo

See also Independent Study bulletin for nursing courses on human growth and development through the lifespan: Nurs 3690/5690 and Nurs 3691/5691.

Registered nurses who wish to continue their studies toward a degree in nursing should contact the School of Nursing Admissions Office, 5-140 UnitF, 308 Harvard St. S.E., University of Minnesota, Minneapolis, MN 55455; (612) 624-3108.

Operations and Management Science (OMS)

(332 Management/Economics: 624-7010)

Carlson School of Management

Textbooks for most OMS courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also the Management Advancement Program)

John C. Anderson, Associate Professor

Rajiv Banker, Professor

P. George Benson, Associate Professor

Norm Chervany, Professor

Gretchen Donahue, Adjunct Professor

Arthur V. Hill, Professor

Thomas R. Hoffmann, Professor

Charles Hunt, Adjunct Professor, Management Systems, Alliant Techsystems, Inc.

David Kelton, Professor of Operations and Management Science

Inder Khosla, Assistant Professor of Operations and Management Science

John Knauff, Adjunct Professor, Knauff & Associates, Inc.

Abbas Kurawarwala, Assistant Professor

James R. Luck, Adjunct Professor, Minnesota Technology, Inc.

Chris Nachtsheim, Professor

Dale Nelson, Adjunct Professor, Partner, Nelson-Anderson Group

John Nicolay, Adjunct Professor, President, Crossroads Management Advisors

Roger G. Schroeder, Professor

James R. Schroer, Executive Fellow and Adjunct Professor

Howard Strauss, Senior Executive Fellow and Adjunct Professor

Michael Taaffe, Assistant Professor

Lee Wickstrom, Extension Coordinator and Adjunct Professor

Carlson School of Management degree students must take Operations and Management Science courses A-F.

Undergraduate Core—Beginning with admission for Fall Qtr 1988, several lower division and upper division OMS and IDSc (formerly Department of Management Sciences) class changes were implemented by the Carlson School of Management. If you are seeking admission to the Carlson School and you have taken DSci 1050, MIS 3100 and/or MIS 3101, please contact a CEE adviser in 314 Nolte Center, or call 625-2500 for information.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Professional Advancement and Promotion—Students interested in advancement and promotion in the operations management profession should prepare by taking OMS courses in this order: (1) 1020, (2) 3000, (3) 3041, 3056, 3059, and (4) 3850 or any OMS 5xxx-level course. These courses are required for both the undergraduate emphasis and a proposed certificate in Operations Management, and thus serve as a fundamental prerequisite to a successful professional career in operations or general management.

OMS 1020 (formerly MSci 1020) DATA ANALYSIS AND STATISTICAL INFERENCE FOR MANAGERS. 4 credits, §MSci 1020, tuition* (includes \$16 special fee): Resident \$296; Non-resident \$828. (IS)

Introduction to probabilistic and statistical techniques for decision making, including data analysis, sampling, estimation, and hypothesis testing and regression. Using computer software and computer-stored data in statistical analysis. Introduction to modeling and linear programming. (Prereq MSci 1010 or IDSc 1010, Math 1111; Math 1131 recommended. Limited to 45)

Fall Qtr, ★Sec 1, Th, 5:30-8:50, BlegH 125
 Winter Qtr, ★Sec 2, T, 5:30-8:50, BlegH 125
 Winter Qtr, ★Sec 3, Th, 5:30-8:50, BlegH 125
 Spring Qtr, ★Sec 4, T, 5:30-8:50, BlegH 125
 Spring Qtr, ★Sec 5, Th, 5:30-8:50, BlegH 125

OMS 3000 (formerly OM 3000) INTRODUCTION TO OPERATIONS MANAGEMENT. 4 credits, §OM 3000, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Concepts and principles related to the management of operations functions, including operations strategy, process design, just-in-time, forecasting, inventory management, principles of scheduling, and quality improvement. Taught from a managerial perspective, this course uses examples from service industries, nonprofit organizations, and manufacturing, and stresses the relationships between operations and the environment. (Prereq at least 90 credits completed or in progress. *Open to nondegree students with equivalent experience.* Limited to 50)

Fall Qtr, ★Sec 1, M, 5:30-8:50, BlegH 140
 Fall Qtr, ★Sec 2, Th, 5:30-8:50, BlegH 135
 Winter Qtr, ★Sec 3, M, 5:30-8:50, BlegH 150
 Winter Qtr, ★Sec 4, Th, 5:30-8:50, BlegH 250
 Spring Qtr, ★Sec 5, M, 5:30-8:50, BlegH 130
 Spring Qtr, ★Sec 6, Th, 5:30-8:50, BlegH 250

OMS 3041 (formerly OM 3041) PROJECT MANAGEMENT. 4 credits, §OM 3041, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973. (IS)

Principles and methods useful for planning and controlling a project, including development of project plan, resource planning and scheduling, and project monitoring and control. Selected computerized packages are studied, including PERT and CPM, and examples of different types of projects from manufacturing and service industries are used. Open to IT seniors and graduate students in place of CE 5703 or IEOR 5703, Engineering Project Management. (Prereq 3000 or OM 3000 and at least 90 credits completed or in progress. *Open to nondegree students with equivalent experience.* Limited to 35)

Spring Qtr, ★Sec 1, Th, 5:30-8:50, BlegH 415

OMS 3056 (formerly OM 3056) PRODUCTION AND INVENTORY MANAGEMENT. 4 credits, §OM 3056, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Inventory planning, production planning, Materials Requirements Planning (MRP), just-in-time concepts, finite loading systems, distribution systems, forecasting, master scheduling, capacity management, production activity control, and purchasing. Taught from a planning and control systems point of view with managerial orientation. (Prereq 3000 or OM 3000 and at least 90 credits completed or in progress. *Open to nondegree students with equivalent experience.* Limited to 35)

Winter Qtr, ★Sec 1, Th, 5:30-8:50, BlegH 210

OMS 3059 (formerly OM 3059) QUALITY MANAGEMENT. 4 credits, §OM 3059, tuition* (includes \$16 special fee): Resident \$346; Non-resident \$973.

Key issues of quality management, including planning and organizing for quality improvement, cost of quality, customer and vendor relations, process control, quality control, management of the improvement process. The course introduces concepts and principles relevant to both service and manufacturing environments, and involves lecture and case instruction. (Prereq 3000 or OM 3000 and at least 90 credits completed or in progress. *Open to nondegree students with equivalent experience.* Limited to 35)

Fall Qtr, ★Sec 1, W, 5:30-8:50, BlegH 330

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

OMS 3850 TOPICS IN OMS: AGILE ENTERPRISE: Planning, Development, and Implementation. 4 credits, tuition* (includes \$16 special fee); Resident \$346; Non-resident \$973.

Participants learn how to develop and implement an agile enterprise strategy that will support and strengthen corporate global strategy and make their enterprises more competitive. The agile enterprise uses computers to gain flexibility, to respond quickly to new customer requirements, and to attain corporate-wide concurrency. It uses EDI connections to quickly involve subcontractors and other suppliers-partners in dynamic multi-venturing. An implementation plan toward achieving an agile enterprise will be developed by showing how projects, systems, procedures, and policies support the attainment of strategic objectives. (Prereq 3000 or OM 3000. Limited to 35)

Fall Qtr, ★Sec 1, Th, 5:30-8:50, BlegH 115

OMS 3850 TOPICS IN OMS: INTERNATIONAL OPERATIONS MANAGEMENT. 4 credits, tuition* (includes \$16 special fee); Resident \$346; Non-resident \$973.

Topics offered are the following: global operations planning, strategy development, product and process design, technology transfer, supplier alliances, licensing and facility location in the most favorable environment for attaining global goals. Competing in the international marketplace as a world class manufacturer or service operator is the theme of the course. (No prereq)

Winter Qtr, Sec 2, M, 5:30-8:50, BlegH 215

OMS 3850 TOPICS IN OMS: BUSINESS LAB TEAM PROJECT. 4 credits, tuition* (includes \$16 special fee); Resident \$346; Non-resident \$973.

Prepares students to lead inter-functional teams solving real-world business problems at the 3M Business Lab using data collected from 3M customers and operations. Topics include project team planning, consensus via story-boarding, team leadership skills, definition of work detail, analysis of findings, development of creative solutions, and presentation of recommendations to 3M with instructor. (Prereq 3000, OM 3000 or #. Limited to 45)

Spring Qtr, ★Sec 3, W, 5:30-8:50, BlegH 330

OMS 5100 MANUFACTURING FOR COMPETITIVE ADVANTAGE. 4 credits, tuition* (includes \$16 special fee); Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

Overview of the manufacturing function, particularly as manufacturing can contribute to the competitiveness of the firm. Intended primarily for students in engineering and management disciplines. Topics include manufacturing strategy, technology issues, quality issues, and integration of the work force into the effort. The course is affiliated with the Center for the Development of Technological Leadership (CDTL). **Must be taken A-F.** (Prereq 3000 or IEOB 3000 or MBA 8050 or written #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Spring Qtr, ★Sec 1, T, 5:30-8:50, Law 3

OMS 5155 STATISTICAL METHODS FOR QUALITY AND PRODUCTIVITY IMPROVEMENT. 4 credits, tuition* (includes \$16 special fee); Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

Methods for on-line and off-line quality control. Quality management philosophy, Pareto analysis, control charts, experimental design, and sampling inspection. Applications to administrative service, and production operations. (Prereq OMS 1020 or MSci 1020 or #. Qualified students may register for graduate credit at the University of Minnesota. *Open to nondegree students with equivalent experience.* A joint Day/Extension class limited to 7 Extension students)

Winter Qtr, ★Sec 1, Th, 5:30-9, BlegH 330

OMS 5170 SIMULATION MODELING. 4 credits, tuition* (includes \$16 special fee); Resident \$346; Non-resident \$973; Resident Graduate credit \$412; Non-resident Graduate credit \$808; Resident Graduate School credit \$700; Non-resident Graduate School credit \$1384.

Survey of probabilistic modeling, with emphasis on computer simulation of complex systems. Event-scheduling simulation models, process-interaction using a high-level simulation language, structural and quantitative simulation modeling, overview of simulation methodological issues, and animation. Use of computers and various languages to carry out actual simulation studies. Business applications. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. *Open to nondegree students with equivalent experience.* A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★Sec 1, M, 5:30-9, BlegH 335

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

**APEX (Academy Practitioner Exchange)
Project**

APEX PROJECT COURSES. 4 credits (may be repeated for credit). Tuition* (includes \$450 special fee): Resident \$780; Non-resident \$1407; Resident Graduate credit \$846; Non-resident Graduate credit \$1242; Resident Graduate School credit \$1134; Non-resident Graduate School credit \$1818.

A special program designed to provide a productive interaction between faculty and practitioners who are interested in developing the frontiers of knowledge and practice. Opportunity to study special topics in operations and management science in depth. Participative inquiry formats address current interests. Designed to sharpen concept and practice. Interaction with faculty, practitioners, and resource person in team settings. (Prereq minimum of two years of managerial experience. Qualified students may register for graduate credit at the University of Minnesota.) Call Jill Patterson, *Extension Classes, for information on registration and necessary materials, 625-0566.* The course is offered on Thursday evenings each quarter from 5:30-8:30.

For further information about courses listed below, contact the course coordinator at (612) 624-7558.

OMS 5998 COMPUTER-INTEGRATED ENTERPRISE: Planning and Development.

Shows how to achieve functional and organizational integration of operations and how to develop Computer-Integrated Enterprise (CIE) teams. The class will perform competitive benchmark analysis of collected data. It further covers how to develop a corporate vision and an appropriate CIE architecture. A realistic evolution path to CIE will be derived with the participants. Case studies of early CIE successes will be studied. (Limited to 15)

Winter Qtr, ★Sec 1, Th, 5:30-8:50, BlegH 135

OMS 5998 SEMINAR: BETTER PRODUCTS TO MARKET SOONER.

How to reduce the time normally needed to develop a new product. The steps in the new product introduction cycle are defined and organized into logical phases. Ideas and approaches of concurrent and simultaneous engineering are explained, evaluated, and implemented. The approach uses cross-functional teamwork. The team may have a mix of market specialists, product planners, design analysts, process/manufacturing engineers, tooling designers, and other specialists as required in certain businesses. The facilitator will emphasize design for manufacturability and design for assembly. Participants may bring actual problems to class. Class will work out when the optimal time is to start-and-stop development. The

objective is to get to the market first or sooner. Typical participant in this seminar should have an undergraduate engineering degree and might be working on or managing a design-to-production transition team. (Limited to 15)

Spring Qtr, ★Sec 2, Th, 5:30-8:50, Law 3

APEX Project orientation sessions are conducted regularly to acquaint participants with the scope and practice. Prospective participants should contact the APEX Project coordinator for further details on orientation sessions and APEX Project courses: (612) 624-7558.

Ophthalmology

(Your attention is called to the Ophthalmology Technician Certificate in the Degrees and Certificates section of this Bulletin)

Persian

(See Area Studies Programs, page 75, and the Institute of Languages and Literatures, page 237.)

Pharmaceutics (Phmc)

(9-177 Health Sciences Unit F: 624-5151)

College of Pharmacy

Textbooks for most Phmc courses are available at the Health Sciences Bookstore (625-8600).

No courses offered 1993-94.

Pharmacognosy (Phcg)

(5-110 Health Sciences Unit F: 624-9490)

College of Pharmacy

Textbooks for most Phcg courses are available at the Health Sciences Bookstore (625-8600).

John Staba, Professor of Pharmacognosy

Phcg 1800 NATURE'S REMEDIES. 3 credits, tuition* (includes \$10 special fee): Resident \$220; Non-resident \$619.

Evaluation of those substances obtained from nature that are medicinally used. Chemical and physiological terms defined. History and literature; vitamins and enzymes; drugs from animals (hormones); drugs from the sea and microorganisms (antibiotics and vaccines); spices and herbs; tranquilizing plants; stimulating and hallucinogenic plants; poisonous plants and mushrooms. Herbal tea discussions. **Must be taken S-N.** (No prereq. Limited to 25)

Spring Qtr, ★Sec 1, T, 6:20-8:50, HSUnitF 7-193, Staba

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Pharmacy Practice (Phar)

(5-110 Health Sciences Unit F: 624-9490)

College of Pharmacy

Textbooks for most Phar courses are available at the Health Sciences Bookstore (625-8600).

Thomas M. McKennell, Assistant Professor and
Director of Pharmacy Continuing Education
Robert E. Yahnke, Associate Professor

Phar 5007 BIOLOGY OF AGING. 2 credits, §SAPh 5007, §HSU 5031, tuition*: Resident \$205; Non-resident \$594.50.

Biological theories of aging are reviewed; biological changes associated with aging in organ and sensory systems are studied. Other topics examined are the nutritional needs of the elderly, and their use of medications. Physical changes due to normal aging are contrasted with those having a pathological base. (No prereq. Students who wish to take this course for undergraduate credit should register for either Phar 5007 or HSU 5031. Students who wish to take this course for graduate credit should register for SAPh 5007. Meets concurrently with HSU 5031 and SAPh 5007. A joint Day/Extension class)

Winter Qtr, ●Sec 1, Th, 4:40-6:25, MoosT 5125,
McKennell

Phar 5008 HUMANITIES AND AGING. 2 credits, §HSU 5030, tuition*: Resident \$205; Non-resident \$594.50.

Aging through the perspectives of literature, music, art, philosophy, and history. The historical experience of today's elderly cohort, paternalism, generational conflict, cross-cultural ceremonies of aging, and changing attitudes toward the elderly in America. (No prereq. May not be taken for graduate credit. Meets concurrently with HSU 5030. A joint Day/Extension class)

Spring Qtr, ●Sec 1, Th, 4:40-6:25, ApH 302,
Yahnke

Phar 5009 MULTIDISCIPLINARY PERSPECTIVES ON AGING. 4 credits, §AdEd 5440, §HSU 5009, §CPsy 5305, §PA 5414, §SW 5024, §Soc 5960, §PubH 5737, tuition*: Resident \$410; Non-resident \$1189.

Biological, social, psychological aspects of aging; theories of aging; death and bereavement; issues and problems of older adults in America; human services and their delivery systems; public policy and legislation; environments and housing; advocates; retirements. (No prereq. May not be taken for graduate credit. Meets concurrently with AdEd 5440, CPsy

5305, HSU 5009, PA 5414, PubH 5737, Soc 5960, and SW 5024. A joint Day/Extension class)

Fall Qtr, ★●Sec 1, MW, 4:40-6:25, MoosT 2-690
(Limited to a combined total of 37 Extension students)

Spring Qtr, ●Sec 2, MW, 4:40-6:25, MoosT 2-690

Phar 5210 TERMINOLOGY OF THE HEALTH SCIENCES. 2 credits, §HSU 5210, tuition*: Resident \$205; Non-resident \$594.50.

A self-study course that has been designed to provide students with a working knowledge of the terminology utilized in the health sciences. There are no formal class sessions. Students take four tests during the term and the schedule for these is provided at the beginning of each term, when orientation sessions are held. For information, call 624-2442 before the first day of the term, or go to room 5-120 HSUnitF during regular office hours. (No prereq. May not be taken for graduate credit. Meets concurrently with HSU 5210. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Arr, McKennell

Winter Qtr, ●Sec 2, Arr, McKennell

Spring Qtr, ●Sec 3, Arr, McKennell

Pharmacy, Continuing Education in—For information about continuing education programs in Pharmacy, please contact the Office of Continuing Education in Pharmacy, University of Minnesota, 308 Harvard Street S.E., 5-120 Health Sciences Unit F, Minneapolis, MN 55455. Telephone (612) 624-2442.

Philosophy (Phil)

(355 Ford Hall: 625-6563)

College of Liberal Arts

Textbooks for most Phil courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also English; Humanities; Interdepartmental Study; and The Compleat Scholar noncredit courses)

C. Anthony Anderson, Professor
Terence W. Ball, Professor of Political Science
Norman O. Dahl, Professor
John M. Dolan, Professor
William H. Hanson, Professor
Jasper S. Hopkins, Professor
Douglas E. Lewis, Professor
Joseph Owens, Associate Professor
C. Kenneth Waters, Assistant Professor

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

A major in Philosophy can be completed in the evening.

Those courses required in the major are offered yearly. Interested students should discuss their plans with an adviser (625-2500).

B.A. Major Sequence

A coherent major program signed by an adviser (samples of coherent major programs are available from the Director of Undergraduate Studies)

- Phil 1002 Introduction to Philosophy
- Phil 1001 or 3201, or 5201, Logic
- Phil 3001 and Phil 3003, History of Philosophy
- Phil 3105 or 3601 or 5105 or 5601, Epistemology
- Phil 3311 or 5311 or 5312 or 5321 or 5415, Ethics

A major project (for further information consult the Director of Undergraduate Studies—625-6563)

At least nine four- or five-credit philosophy courses at the 3000 or 5000 level with grades of C or higher (exception: two courses may have grades of S), at least three of which are 5000-level courses, and at least four of which are courses completed at the University of Minnesota.

Minor Sequence

Minor Requirements

Minimum of 20 3000-5000 cr in philosophy. Course selections must be approved by a philosophy faculty adviser. For further information consult the Director of Undergraduate Studies (625-6563).

(Consult the department for possible changes in major or minor sequences)

You need not be majoring in Philosophy to register for these classes.

Students interested in the major or minor should call CEE Counseling for advising assistance (625-2500).

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Philosophy. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Continuing Education for Women (CEW) sections available in the following courses: Phil 1003

Phil 1001 LOGIC. 5 credits, tuition*: Resident \$350; Non-resident \$1015. (IS)

Application of formal techniques for evaluating arguments. (No prereq. Limited to 45)

Fall Qtr, ★Sec 1, M, 6:20-8:50, FordH 155

Fall Qtr, ★Sec 2, W, 6:20-8:50, FordH 115

Fall Qtr, ★Sec 3, T, 6:20-8:50, FordH 120

Winter Qtr, ★Sec 4, W, 6:20-8:50, Richfield HS 143 (Limit 30)

Winter Qtr, ★Sec 5, T, 6:20-8:50, FordH 55

Winter Qtr, ★Sec 6, Th, 6:20-8:50, FordH 155

Spring Qtr, ★Sec 7, M, 6:20-8:50, FordH 155

Spring Qtr, ★Sec 8, W, 6:20-8:50, FordH 55

Phil 1002 INTRODUCTION TO PHILOSOPHY. 5 credits, tuition*: Resident \$350; Non-resident \$1015. (IS)

Problems, principal methods and schools of philosophy; historical and contemporary views. (No prereq)

Fall Qtr, Sec 1, W, 6:20-8:50, FordH 349

Fall Qtr, Sec 2, Th, 6:20-8:50, FordH 115

Winter Qtr, Sec 3, M, 6:20-8:50, FordH 55

Winter Qtr, Sec 4, W, 6:20-8:50, FordH 150

Spring Qtr, Sec 5, T, 6:20-8:50, FordH 130

Phil 1003 ETHICS. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Problems that arise when human beings attempt to think systematically about conduct and value. (No prereq)

Fall Qtr, Sec 1, T, 1-3:30, MacP. *Offered through Continuing Education for Women*

Winter Qtr, Sec 2, T, 6:20-8:50, FordH 115

Spring Qtr, Sec 3, Th, 6:20-8:50, FordH 115

(See also CSch 0242, Who Will Live: Ethical Dilemmas in Health Care Decisions)

Phil 3001 GENERAL HISTORY OF WESTERN PHILOSOPHY. 5 credits, tuition*: Resident \$367.50; Non-resident \$1065.75

Survey of major developments in Western philosophical thought: Greek philosophy, pre-Socratics, Socrates, Plato, Aristotle. (No prereq)

Fall Qtr, Sec 1, W, 6:20-8:50, FordH 120, Dahl

(See also CSch 0231, The Nature of Justice: Plato's *Gorgias* and *Republic*)

Phil 3003 GENERAL HISTORY OF WESTERN PHILOSOPHY. 5 credits, tuition*: Resident \$367.50; Non-resident \$1065.75

Survey of major developments in Western philosophical thought: Modern philosophy from Descartes through Hume. (No prereq)

Spring Qtr, Sec 1, T, 5:20-7:50, FordH 160, Lewis

Phil 3105 INTRODUCTION TO THE THEORY OF KNOWLEDGE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Theories and problems concerning evidence, belief, and knowledge. (Prereq 1001 or #)

Spring Qtr, Sec 1, W, 6:20-8:50, FordH 170, Anderson

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Phil 3231 INTRODUCTION TO THE PHILOSOPHY OF LANGUAGE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Elementary issues concerning the nature of reference, linguistic convention, linguistic truth, translation, synonymy or the relation between language and thought. (Prereq 1001 or #)

Fall Qtr, Sec 1, M, 6:20-8:50, FordH 285, Owens

Phil 3601 SCIENTIFIC THOUGHT. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

People once believed that the Sun rotates around a motionless Earth, that maggots spontaneously generate from rotting meat, and that the continents are fixed to the Earth. These views were taught by the most learned people of their times and led to useful predictions and technological advances. Nevertheless, scientists now teach us that these views were mistaken and promote a different set of beliefs. But why should we believe today's scientists? After all wouldn't it be reasonable to predict that future scientists will discard today's "facts" and theories? We will then examine the scientific creationism controversy. Your newly gained understanding of scientific rationality will help you determine why scientific reason favors evolutionary theory. (Prereq 1002, two natural science courses or completion of Group B distribution requirement)

Winter Qtr, Sec 1, M, 6:20-8:50, FordH 175, Waters

Phil 5201 SYMBOLIC LOGIC I. 5 credits, tuition*: Resident \$367.50; Non-resident \$1065.75; Resident Graduate credit \$495; Non-resident Graduate credit \$990; Resident Graduate School credit \$855; Non-resident Graduate School credit \$1710.

Development of a formalized language. Syntax and semantics of sentential and first-order logic. Deductive systems. (Prereq 1001 or #. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, T, 6:20-8:50, FordH 130, Hanson

Phil 5521 PHILOSOPHY OF RELIGION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Analysis of conceptual problems that arise from attempts to provide a rational justification for religious belief. (Prereq 8 cr in philosophy. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, T, 6:20-8:50, FordH 170, Hopkins

Phil 5615 MINDS, BODIES, AND MACHINES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Philosophical relevance of cybernetics, artificial intelligence, and computer simulation. (Prereq 4 cr in philosophy or #. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, W, 6:20-8:50, FordH 170, Owens

Phil 5760 SELECTED TOPICS IN PHILOSOPHY: ETHICS: Who or What Has Moral Standing? 4 credits, \$Pol 5760, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

An introduction to ethics focused on the question: "Who or what has moral standing?" Among the specific questions addressed are these: Do non-human animals have moral claims on us? Do human fetuses have such claims? Persons in persistent coma? Future generations? Texts will include theoretical writings in philosophy and political science and the term's work will emphasize the development and exercise of deductive and analytical skills. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Pol 5610. Limited to a combined total of 30)

Fall Qtr, Sec 1, T, 6:20-8:50, FordH 150, Ball, Dolan

Phil 5760 SELECTED TOPICS IN PHILOSOPHY. 2 credits. **Not offered 1993-94.**

Meets concurrently with a multidisciplinary course, ID 5515-5516-5517 (Ways of Knowing: Six Disciplines Examined). Faculty from six different disciplines meet together with students weekly for a full academic year to discover how various academic disciplines ask questions, gather information, and validate theories. Disciplines examined include biochemistry, genetics and cell biology, African-American studies, philosophy, psychology, and art history. Students must enroll each quarter for four credits of the ID 5515-5516-5517 or four credits of corresponding special topics courses; students must enroll all three quarters to receive credit. Limited to a combined total of 18 students. **For information about registration and graduate credit, call (612) 625-3898.**

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Photography

(See Art History; Studio Arts; General College; and The Compleat Scholar noncredit courses)

Physical Education (PE)

(224 Cooke Hall: 625-1007)

College of Education

(School of Kinesiology and Leisure Studies)

Textbooks for most PE courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Robert Fusaro, Teaching Specialist

(See also Dance; Kinesiology; Recreation; and The Practical Scholar noncredit courses)

Courses listed below are ranked numerically according to activity level, i.e., the level or skill required. The activity level of each course is indicated by the second digit in the course number, 0=first level, 1=second level, and so on. Thus 1007, for example, is a first-level course and 1107 is a second-level course. In most cases, the lower level course is a prerequisite for the higher; however, students who can demonstrate sufficient skill in an activity may usually register for the most advanced course without completing the prerequisite(s).

Most of the courses are considered high intensity, that is, they require a high level of physical exertion. Thus students are encouraged to consider carefully any limits on their health or physical fitness and to consult a physician if they have any questions about their health or about their ability to participate safely in the physical activities involved in any course for which they wish to register.

Students who do not attend the first and/or second meeting of a class forfeit their place. If a class is closed at the time of registration, a student may report to the first class meeting to ask about possible cancellations.

Sports Management—The School of Kinesiology and Leisure Studies will offer a certificate in Sports Management through Continuing Education and Extension beginning Fall Quarter 1992. For information, call 625-1007.

Coaching Licensure—Beginning Fall 1993, all courses necessary for the Minnesota State Coaching Licensure will be offered through Continuing Education and Extension and the summer session over a two-year period. For information, call (612) 625-1007.

Physical activity courses (numbered through 1499) may be taken S-N. Those numbered 1500 and above may not be taken S-N by Education students.

PE 1007 SWIMMING. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Designed for the beginner including aquatic breathing, floating, treading water, finning, human stroke, elementary backstroke, sidestroke, front crawl. (Prereq non-swimmer. Limited to 25)

Fall Qtr, ★ Sec 1, MW, 6:10-7:10, CookeH 10

Winter Qtr, ★ Sec 2, MW, 6:10-7:10, CookeH 10

Spring Qtr, ★ Sec 3, MW, 6:10-7:10, CookeH 10

PE 1014 CONDITIONING. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Improvement of physical fitness and general appearance through the use of running, circuit training, and progressive exercises. (No prereq. Limited to 40)

Fall Qtr, ★ Sec 1, W, 6-8, FieldHse

Winter Qtr, ★ Sec 2, T, 6-8, FieldHse

Spring Qtr, ★ Sec 3, T, 6-8, FieldHse

Spring Qtr, ★ Sec 4, Th, 6-8, FieldHse

(See also PSch 0934, Fitness for the Advanced Exerciser: Making Knowledgeable Choices)

PE 1015 WEIGHT TRAINING. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Fundamentals including techniques, theory, and individualized exercise prescription. (No prereq. Limited to 25)

Fall Qtr, ★ Sec 1, T, 6-8, URC

Winter Qtr, ★ Sec 2, W, 6-8, URC

Spring Qtr, ★ Sec 3, T, 6-8, URC

PE 1029 HANDBALL. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Basic fundamentals of skills and shots; rules and game strategy. (No prereq. Limited to 22)

Fall Qtr, ★ Sec 1, T, 8-10, URC

Winter Qtr, ★ Sec 2, T, 8-10, URC

Spring Qtr, ★ Sec 3, T, 8-10, URC

PE 1033 FOIL FENCING. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Developing necessary physical and perceptual skills. Includes history, rules, and practical bouts experience. (No prereq. Limited to 28)

Fall Qtr, ★ Sec 1, W, 6-8, CookeH 308

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

PE 1035 KARATE. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Emphasis on learning basic stances, blocks, and attacks; hand and foot techniques. (No prereq. Students should be aware they will be asked to pay a facilities fee. Consult the instructor at the first class meeting. Limited to 40)

Fall Qtr, ★ Sec 1, T, 6-8, U-Tech Bldg, Fusaro

Winter Qtr, ★ Sec 2, T, 6-8, U-Tech Bldg, Fusaro

PE 1036 RACQUETBALL. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Fundamentals of skills and shots; rules and game strategy. (No prereq. Limited to 22)

Fall Qtr, ★ Sec 1, Sa, 9-11, URC

Winter Qtr, ★ Sec 2, Sa, 9-11, URC

Spring Qtr, ★ Sec 3, Sa, 9-11, URC

PE 1037 SQUASH RACQUETS. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Fundamental strokes and rules with game situations emphasized. (No prereq. Limited to 28)

Winter Qtr, ★ Sec 1, T, 8-10, URC

PE 1038 TENNIS. 1 credit tuition*: Resident \$70; Non-resident \$203.

Fundamental strokes of service, forehand and backhand drives, and volley; court positions and strategy for singles and doubles; rules, terminology, etiquette. (No prereq. Limited to 24)

Fall Qtr, ★ Sec 1, Th, 8-10, FieldHse

Winter Qtr, ★ Sec 2, Th, 8-10, FieldHse

Spring Qtr, ★ Sec 3, Th, 6-8, FieldHse

PE 1041 CYCLING. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Basic skills; physiological and mechanical principles; maintenance, safety, training. Supply own bicycle. (No prereq. Limited to 25)

Spring Spec Term, ★Sec 1, Sa, 9 a.m.-12, Apr.

16-May 21, CookeH 215. *No late fee through Apr. 8*

PE 1044 SELF DEFENSE. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Fundamental skills; development of the basic skills and techniques, values derived from active participation in physical activity. (No prereq. Limited to 45)

Fall Qtr, ★ Sec 1, W, 6-8, Gym (StP), StP Campus, Holm

Winter Qtr, ★ Sec 2, W, 6-8, Gym (StP), StP Campus, Holm

Spring Qtr, ★ Sec 3, W, 6-8, Gym (StP), StP Campus, Holm

PE 1050 GOLF. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Fundamentals of grip, stance, and swing in addition to etiquette and rules; moderate intensity. (No prereq. Limited to 20)

Spring Qtr, ★ Sec 1 M, 5:45-7:15, St. Paul Gym, Golf Course

Spring Qtr, ★ Sec 2, T, 5:45-7:15, St. Paul Gym, Golf Course

Spring Qtr, ★ Sec 3, W, 5:45-7:15, St. Paul Gym, Golf Course

Spring Qtr, ★ Sec 4, Th, 5:45-7:15, St. Paul Gym, Golf Course

PE 1056 NORDIC (CROSS COUNTRY) SKIING. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Basic techniques; participation in an exercise and conditioning program preparatory to skiing. Students supply own skis. (No prereq. Limited to 30)

Winter Spec Term, ★ Sec 1 Sa, 9 a.m.-12, Jan.

8-Feb. 12, Gym Classroom, StP Campus

Winter Spec Term, ★Sec 2, Sa, 1-4, Jan. 8-Feb. 12, Gym Classroom, StP Campus

PE 1074 VOLLEYBALL. 1 credit, tuition*: Resident \$70; Non-resident \$203.

Fundamental skills and rules of volleyball; basic team play and strategy. (No prereq. Limited to 26)

Fall Qtr, ★ Sec 1, M, 5-7, CookeH 325

Winter Qtr, ★ Sec 2, M, 5-7, CookeH 325

Spring Qtr, ★ Sec 3, M, 5-7, CookeH 325

PE 3330 DANCE TOPICS: TEACHING AEROBICS. 2 credits, tuition* (includes \$7 special fee): Resident \$172; Non-resident \$485.50.

Students develop a core knowledge and practical skills for teaching dance exercise and basic knowledge of human anatomy, kinesiology, and physiology. (Prereq 1003 or 1006. Meets concurrently with Dnce 3330)

Fall Qtr, ★Sec 1, MW, 5:20-6:50, PeikG 65

Physical Medicine and Rehabilitation (PMed)

(860 Mayo: 626-4050)

Medical School

Textbooks for most PMed courses are available at the Health Sciences Bookstore (625-8600).

(See also Cell Biology and Neuroanatomy; and General College courses)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

PMed 5135 PATHOKINESIOLOGY. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Lecture course materials and laboratory experiences are designed to develop an understanding of normal and abnormal body movement patterns and capabilities. **Must be taken A-F.** (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)
Fall Qtr, ●Sec 1, Arr

PMed 5150 KINESIOLOGICAL ELECTROMYOGRAPHY AND NERVE CONDUCTION. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

A lecture and a laboratory format course designed to develop understanding and skill in the use of electromyography and nerve conduction for evaluating movement. (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)
Fall Qtr, ●Sec 1, Arr

PMed 5294 INDEPENDENT STUDY IN PHYSICAL THERAPY. Credit arr, tuition* each credit: Resident \$102; Non-resident \$295.80; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Independent reading, and formal and informal discussions on a specific topic, for example, physical therapy for pediatric patients. (Prereq # or registered physical therapy student. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Arr
Winter Qtr, ●Sec 2, Arr
Spring Qtr, ●Sec 3, Arr

PMed 5810 ASSESSMENT OF THE ELDERLY. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Lectures, course materials, and on-site experiences are designed to develop understanding and skill in developing and using cardiopulmonary endurance, strength, activities of daily living, and perceptual

assessment techniques. Arranged experiences at high-rise apartments for the elderly and handicapped. (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, Arr

PMed 5841 INSTRUMENTATION AND ANALYSIS TECHNIQUES. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Lectures and course materials are designed to develop an understanding of instrumentation, scientific principles, and analytical methods used for rehabilitation research and therapies. (Prereq Phys 1031, 1032 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ●Sec 1, Arr

PMed 8130 CURRENT LITERATURE SEMINAR IN PHYSICAL THERAPY. 1 credit, tuition*: Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Current literature in physical therapy and related medical fields. (No prereq. Open only to students admitted to the University of Minnesota Graduate School. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Arr
Winter Qtr, ●Sec 2, Arr
Spring Qtr, ●Sec 3, Arr

PMed 8170 SPECIAL TOPICS IN PHYSICAL THERAPY. 1 credit, tuition*: Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Advanced seminar. Topics vary from quarter to quarter. Prepared papers required. (No prereq. Open only to students admitted to the University of Minnesota Graduate School. A joint Day/Extension class)

Fall Qtr, ●Sec 1, Arr
Winter Qtr, ●Sec 2, Arr
Spring Qtr, ●Sec 3, Arr

PMed 8192 RESEARCH DESIGN IN PHYSICAL THERAPY. 3 credits, tuition*: Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Critical appraisal of current medical literature; fundamentals of research design and techniques of medical writing. (No prereq. Open only to students admitted to the University of Minnesota Graduate School. A joint Day/Extension class)

Winter Qtr, ●Sec 1, Arr

* Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Physics (Phys)

(148 Physics: 624-7375)

Institute of Technology

Textbooks for most Phys courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Interdepartmental Study courses, page 244; and The Compleat Scholar noncredit courses in natural and physical sciences)

Changes in Physics Offerings—NOTE: Registration in a section of Phys 1041-1042 or a section of Phys 1251-1252-1253 automatically places a student in a lecture, recitation, and a laboratory for the course. Labs which were formerly separate course offerings are now included with the lecture portion of the courses.

Computer Labs—Students enrolling in Phys 1041-42, 1251, 1252, and 1253 may be required to pay an additional fee for access to the computer lab.

Phys 1041-1042 INTRODUCTORY PHYSICS. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015. (IS)

Lectures, recitation, and lab sessions. Primarily for students interested in topics useful in technical areas. The fundamental principles of physics in the context of the everyday world. The use of kinematics, dynamics, and conservation principles with quantitative and qualitative problem solving techniques to understand phenomena of mechanics, electromagnetism and the structure of matter. (Prereq high school algebra and plane geometry for 1041; 1041 for 1042. Lectures for sec 1,2,3,4 meet concurrently; lectures for sec 5,6,7,8 meet concurrently. Limited to 18)

Winter Qtr, 1041, ★Sec 1, Lect, TTh, 5:45-7:35, Phys 133; Rec, Th, 7:45-8:35, Phys 143; Lab, T, 7:45-9:35, Phys

Winter Qtr, 1041, ★Sec 2, Lect, TTh, 5:45-7:35, Phys 133; Rec, Th, 7:45-8:35, Phys 157; Lab, W, 6:45-8:35, Phys

Winter Qtr, 1041, ★Sec 3, Lect, TTh, 5:45-7:35, Phys 133; Rec, Sa, 10:10-11 a.m., Phys 143; Lab, Sa, 8-9:50 a.m., Phys

Winter Qtr, 1041, ★Sec 4, Lect, TTh, 5:45-7:35, Phys 133; Rec, Sa, 10:10-11 a.m., Phys 157; Lab, Sa, 11:10 a.m.-1, Phys

Spring Qtr, 1042, ★Sec 1, Lect, TTh, 5:45-7:35, Phys 133; Rec, Th, 7:45-8:35, Phys 143; Lab, T, 7:45-9:35, Phys

Spring Qtr, 1042, ★Sec 2, Lect, TTh, 5:45-7:35, Phys 133; Rec, Th, 7:45-8:35, Phys 157; Lab, W, 6:45-8:35, Phys

Spring Qtr, 1042, ★Sec 3, Lect, TTh, 5:45-7:35, Phys 133; Rec, Sa, 10:10-11, Phys 143; Lab, Lab, Sa, 8-9:50 a.m., Phys

Spring Qtr, 1042, ★Sec 4, Lect, TTh, 5:45-7:35, Phys 133; Rec, Sa, 10:10-11 a.m., Phys 157; Lab, Sa, 11:10 a.m.-1, Phys

(See also CSch 0560, Quarks to Quasars: An Overview of 20th-Century Physics)

Phys 1251, 1252, 1253, 1254 GENERAL PHYSICS I-III-III-IV. 4 credits each quarter, §1271-1281-1291, §1311-1321-1331-1341, §1411H-1421H-1431H-1441H or §1451H-1452H-1453H-1454H, tuition* each quarter: Resident \$280; Non-resident \$812.

Calculus-level general physics course stressing the use of fundamental principles to solve quantitative problems. Description of motion, forces, conservation principles, fields, probability, and the structure of matter. 1251: Mechanics. 1252: Mechanics and waves. 1253: Electricity and magnetism. 1254: Thermal and statistical physics and the atomic structure of matter. (Prereq Math 1251 or ¶Math 1251 for 1251, Math 1252 or ¶Math 1252 for 1252, Math 1261 or ¶Math 1261 for 1253. Lectures meet concurrently. Limited to 16)

Fall Qtr, 1251, ★Sec 1, Lect, MW, 6-7:20, Phys 170; Rec, Th, 6-6:50, Phys 236a; Lab, M, 7:30-9:20, Phys

Fall Qtr, 1251, ★Sec 2, Lect, MW, 6-7:20, Phys 170; Rec, W, 7:30-8:20, Phys 236a; Lab, M, 7:30-9:20, Phys

Fall Qtr, 1251, ★Sec 3, Lect, MW, 6-7:20, Phys 170; Rec, W, 7:30-8:20, Phys 143; Lab, T, 7-8:50, Phys

Fall Qtr, 1251, ★Sec 4, Lect, MW, 6-7:20, Phys 170; Rec, W, 7:30-8:20, Phys 157; Lab, T, 7-8:50, Phys

Fall Qtr, 1251, ★Sec 5, Lect, MW, 6-7:20, Phys 170; Rec, Th, 6-6:50, Phys 143; Lab, Th, 7-8:50, Phys

Fall Qtr, 1251, ★Sec 6, Lect, MW, 6-7:20, Phys 170; Rec, Th, 6-6:50, Phys 157; Lab, Th, 7-8:50, Phys

Fall Qtr, 1251, ★Sec 7, Lect, MW, 6-7:20, Phys 170; Rec, W, 7:30-8:20, FordH 40; Lab, Sa, 8-9:50 a.m., Phys

Winter Qtr, 1252, ★Sec 1, Lect, MW, 6-7:20, Phys 170; Rec, Th, 6-6:50, Phys 143; Lab, M, 7:30-9:20, Phys

Winter Qtr, 1252, ★Sec 2, Lect, MW, 6-7:20, Phys 170; Rec, W, 7:30-8:20, Phys 143; Lab, M, 7:30-9:20, Phys

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Winter Qtr, 1252, ★Sec 3, Lect, MW, 6-7:20, Phys 170; Rec, W, 7:30-8:20, Phys 157; Lab, T, 7-8:50, Phys

Winter Qtr, 1252, ★Sec 4, Lect, MW, 6-7:20, Phys 170; Rec, W, 7:30-8:20, Phys 236a; Lab, T, 7-8:50, Phys

Winter Qtr, 1252, ★Sec 5, Lect, MW, 6-7:20, Phys 170; Rec, Th, 6-6:50, Phys 157; Lab, Th, 7-8:50, Phys

Winter Qtr, 1252, ★Sec 6, Lect, MW, 6-7:20, Phys 170; Rec, Th, 6-6:50, Phys 236a; Lab, Th, 7-8:50, Phys

Spring Qtr, 1253, ★Sec 1, Lect, MW, 6-7:20, Phys 170; Rec, Th, 6-6:50, Phys 143; Lab, M, 7:30-9:20, Phys

Spring Qtr, 1253, ★Sec 2, Lect, MW, 6-7:20, Phys 170; Rec, W, 7:40-8:30, Phys 143; Lab, M, 7:30-9:20, Phys

Spring Qtr, 1253, ★Sec 3, Lect, MW, 6-7:20, Phys 170; Rec, W, 7:40-8:30, Phys 157; Lab, Th, 7-8:50, Phys

Spring Qtr, 1253, ★Sec 4, Lect, MW, 6-7:20, Phys 170; Rec, W, 7:40-8:30, Phys 236a; Lab, T, 6-7:50, Phys

Spring Qtr, 1253, ★Sec 5, Lect, MW, 6-7:20, Phys 170; Rec, Th, 6-6:50, Phys 157; Lab, Th, 7-8:50, Phys

Fall Qtr, 1254, ★Sec 1, TTh, 6-7:50, Phys 133

Phys 3501 MODERN PHYSICS. 4 credits. (IS) Tentatively scheduled for Fall 1994 and each fall thereafter.

Phys 5940 PHYSICS FOR HIGH SCHOOL TEACHERS: EXPERIMENTAL FOUNDATIONS AND HISTORICAL PERSPECTIVES. Directed Project. 2-4 credits (may be repeated for credit), tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

A continuation of the summer Phys 5940. Teachers will work on assignments given in the summer course to incorporate the historical investigative method into their classroom curriculum. *No credit for physics grad students or for grad minors in physics.* Send registration forms to The Bakken, A Library and Museum of Electricity in Life, 3537 Zenith Ave. S., Minneapolis. Telephone (612) 927-6508 for further information and registration instructions. (Prereq Summer Session Phys 5940 and #. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, Day, time arr, The Bakken, A Library and Museum of Electricity in Life, 3537 Zenith Ave S, Mpls

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Plant Biology (PBio)

(220 Biological Science: 625-1234)

College of Biological Sciences

Textbooks for most PBio courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Biol 1103, General Botany; Plant Pathology; The Compleat and Practical Scholar noncredit courses; and Compleat Scholar Weekends)

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Plant Biology. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Continuing Education for Women (CEW) sections available in the following courses: PBio 1012

PBio 1012 (formerly Bot 1012) PLANTS USEFUL TO HUMANS. 4 credits, §Bot 1012, tuition*: Resident \$280; Non-resident \$812.

Roles that plants play and have played in human biological and cultural development. Lectures and demonstrations. (No prereq)

Fall Qtr, Sec 1, T, 6:30-9:30, FordH 115

Spring Qtr, Sec 2, W, 1-4, MacP. Offered through Continuing Education for Women

Plant Pathology (PIPa)

(495 Borlaug Hall: 625-8200)

College of Agriculture

Textbooks for most PIPa courses are available at Books Underground on the St. Paul campus (624-9200).

(See also Agriculture; Plant Biology; Horticulture; The Compleat Scholar and Practical Scholar noncredit courses; and Research Explorations [REX])

Cynthia L. Ash, Extension Educator and Assistant Professor

Thor Kommedahl, Professor Emeritus

David H. MacDonald, Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Plant Pathology. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Course Descriptions

PIPa 1002 PLANT DISEASES AND YOUR GARDEN. 2 credits, tuition*: Resident \$140; Non-resident \$406.

Characteristics of the various causes of plant diseases that can affect the growth of flowers, small fruits, and vegetables in Upper Midwest gardens. Important diseases that may appear in your garden, why they can occur, and how to avoid them. (No prereq. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★Sec 1, W, 6:20-9:10, BorH 365, 295, StP Campus, MacDonald

PIPa 1003 DISEASES OF TREES AND TURFGRASS. 2 credits, tuition*: Resident \$140; Non-resident \$406.

Important diseases of trees and turf in the United States will be studied with emphasis on diseases in the Upper Midwest. Lectures include basic concepts in plant pathology and commercial homeowner disease management. Labs will emphasize disease diagnosis. (No prereq. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★Sec 1, M, 6:20-9:20, BorH 365, 296, StP Campus, Ash

PIPa 5200 POISONOUS PLANTS. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Plants poisonous to animals and people; plant families and species, symptoms of poisoning, and toxic principles. Lectures and field trips. (Prereq Biol 1011, 3 cr botany. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, Th, 5:15-7, BorH 365, StP Campus, Kommedahl

Polish

(See Area Studies Programs, page 75; and the Institute of Languages and Literatures, page 237)

Political Science (Pol)

(1414 Social Sciences: 624-4144)

College of Liberal Arts

Textbooks for most Pol courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also International Relations; Interdepartmental Study; History; Interdepartmental Study; The

Compleat and Practical Scholar noncredit courses; and Public Affairs)

Charles Backstrom, Professor
Terence W. Ball, Professor
Mary G. Dietz, Associate Professor
John M. Dolan, Professor of Philosophy
Raymond Duvall, Professor
James Farr, Professor
William Flanigan, Professor
Edwin Fogelman, Professor
John Freeman, Professor
Virginia Gray, Professor
August H. Nimtz, Jr., Associate Professor
Martin Sampson, Associate Professor
W. Phillips Shively, Professor
Steven Smith, Professor

All graduate students can use only 8001 through 8998 level seminars to satisfy major requirements; they should take lower level political science courses only to correct deficiencies in background when directed to do so by advisers.

A major in Political Science can be completed in the evening.

Those courses required in the major are offered every 2 years. Interested students should discuss plans with an adviser (625-2500).

BA Major Sequence

Required Preparatory Courses

1001, 3051

One of the following four courses: 1025, 1026, 1054 and 1061

Major Requirements

At least 39 credits in 3000- or 5000-level political science courses (including 3051). Of these 39 credits, at least two courses must come from the Political Theory, Comparative Government and Politics, or International Relations subfields; and at least two courses must come from the Politics and Behavior, American Governmental Systems and Processes, or Public Law subfields. No more than four courses may be taken in one subfield. All course work must be taken on the A/F grading system, with grades of C or better.

You need not be majoring in Political Science to register for these classes.

A minor is also available in Political Science. Interested students should call the Departmental Undergraduate Advising Office, 624-8517 or 624-4144, for information.

★ Indicates limited-enrollment section: See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Political Science. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Continuing Education for Women (CEW) sections available in the following courses: Pol 1025

**Interdisciplinary Offering:
Pol 1001/Econ 1102**

The following two courses will be offered concurrently with course material team taught, interwoven, and integrated where appropriate. Students must register for both courses, using separate registration forms for each course. This is a total of 9 credits.

Pol 1001 AMERICAN GOVERNMENT AND POLITICS. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Principles, organization, processes, functions of government, and the interplay of political forces in the United States. Attention given throughout to current issues. (Prereq ¶Econ 1102, sec 4. Meets concurrently with Econ 1102, sec 4. Limited to a combined total of 28)

Winter Qtr, ★Sec 3, TTh, 6:20-9:20, HHH Ctr 20, Freeman, Green

Econ 1102 PRINCIPLES OF ECONOMICS: MACRO-ECONOMICS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Principles underlying economic activity and the way these principles work out through our economic institutions. Macro-economics: national income, money and banking, economic growth. (Prereq 1101 or equivalent, ability to handle simple graphics and elementary algebra at the level of GC 0623 and GC 0631, ¶Pol 1001, sec 3. Meets concurrently with Pol 1001, sec 3. Limited to a combined total of 28)

Winter Qtr, ★Sec 4, TTh, 6:20-9:20, HHH Ctr 20, Freeman, Green

(*About the instructors:* John R. Freeman is Professor of Political Science, and George D. Green is Associate Professor of History)

Also see **Interdepartmental Study courses, page 244.**

International Internships and Study Abroad—Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Develop-

ment (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

General Education

Pol 1001 AMERICAN GOVERNMENT AND POLITICS. 5 credits, tuition*: Resident \$350; Non-resident \$1015. (IS)

Principles, organization, processes, functions of government, and the interplay of political forces in the United States. Attention given throughout to current issues. (No prereq)

Fall Qtr, Sec 1, M, 6-9:15 AndH 270, Smith
Winter Qtr, Sec 2, T, 6:30-9:45, AndH 230
Spring Qtr, Sec 4, W, 6:30-9:45, AndH 230

Pol 1025 WORLD POLITICS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Contemporary international relations; forms of state interaction; problems of conflict and cooperation. (No prereq)

Fall Qtr, Sec 1, M, 6:20-8:50, BlegH 235, Duvall
Spring Qtr, Sec 2, M, 9:30 a.m.-12, MacP. Offered through Continuing Education for Women
Spring Qtr, Sec 3, T, 6:20-8:50, AndH 210

Pol 1026 AMERICAN FOREIGN POLICY. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Institutions and processes that determine American foreign policy; major developments in U.S. foreign policy since World War II; contemporary issues of U.S. policy. (No prereq)

Winter Qtr, Sec 1, M, 6:20-8:50, AndH 350, Sampson

(See also CSch 0589, A Green Marshall Plan? Impact of U.S. Foreign Policy on the Global Environment)

Pol 1041 CONTEMPORARY POLITICAL IDEOLOGIES. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Major modern ideologies such as liberalism, democracy, conservatism, socialism, communism, fascism, nationalism, imperialism, racism. Adequacy of alternative ideologies for analysis and solution of political and social problems. (No prereq)

Winter Qtr, Sec 1, W, 6:20-8:50, BlegH 205, Farr

Pol 1054 INTRODUCTION TO COMPARATIVE POLITICS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Politics of democratic, communist, and third world nations; examines the causes and consequences of different forms of political life. (No prereq)

Winter Qtr, Sec 1, Th, 6:20-8:50, BlegH 220

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Pol 1061 INTRODUCTION TO POLITICAL THOUGHT. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Central issues in politics—justice, freedom, authority, order, conflict, and revolution—are examined through readings of major texts in Western political thought. (No prereq)

Spring Qtr, Sec 1, Th, 6:20-8:50, BlegH 335, Dietz

Pol 3051 (formerly 1051) INTRODUCTION TO POLITICAL ANALYSIS. 5 credits, \$1051, tuition*: Resident \$367.50; Non-resident \$1065.75.

Formation of political communities, political participation, policy making, compliance, legitimacy, political development, types of political systems. Empirical and normative problems. Comparisons among major countries. (No prereq)

Winter Qtr, Sec 1, Th, 6:30-9:45, AndH 330

Political Theory

Pol 3659 AMERICAN POLITICAL THOUGHT. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

From colonial times to present: Puritanism; Revolution; Constitution; utopianism; sectionalism and pluralism; anarchist, socialist, populist, and syndicalist thought; social Darwinism; conservatism; political thought in law and literature. (No prereq)

Fall Qtr, Sec 1, M, 6:20-8:50, BlegH 150,
Fogelman

Pol 5610 TOPICS IN POLITICAL THEORY: ETHICS: Who or What Has Moral Standing? 4 credits, \$Phil 5760, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

An introduction to ethics focused on the question: "Who or what has moral standing?" Among the specific questions addressed are these: Do non-human animals have moral claims on us? Do human fetuses have such claims? Persons in persistent coma? Future generations? Texts will include theoretical writings in philosophy and political science and the term's work will emphasize the development and exercise of deductive and analytical skills. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Phil 5760. Limited to a combined total of 30)

Fall Qtr, ★Sec 1, T, 6:20-8:50, FordH 150, Ball,
Dolan

Comparative Government and Politics

Pol 3477 (formerly 3773) POLITICAL DEVELOPMENT. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Political processes and problems associated with economic development processes; the political economy of underdevelopment and development; problems of state building and the development of political institutions. (Prereq 1054 or 3051 or #)

Winter Qtr, Sec 1, M, 6:20-8:50, BlegH 255

Pol 5461 (formerly 5441) WESTERN EUROPEAN GOVERNMENT AND POLITICS. 5 credits, tuition*: Resident \$367.50; Non-resident \$1065.75; Resident Graduate credit \$495; Non-resident Graduate credit \$990; Resident Graduate School credit \$855; Non-resident Graduate School credit \$1710.

Political institutions in their social settings; power and responsibility; governmental stability; political decision making, government and economic order. (Prereq 3051 or nonpolitical science grad student or #. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, T, 6:30-9:45, AndH 330, Shively

International Relations

Pol 3835 THE INTERNATIONAL SYSTEM. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Structure of international system; balance of power, bipolar and other international systems; theories of stability, change, conflict, and cooperation. (No prereq)

Winter Qtr, Sec 1, W, 6:20-8:50, AndH 310

Pol 3836 FOREIGN POLICY DECISION MAKING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Theories and examples of foreign policy decision-making processes, including policy formulation and implementation. Examples drawn from various foreign policy issues. (No prereq)

Spring Qtr, Sec 1, Th, 6:20-8:50, AndH 350

Politics and Behavior

Pol 3739 POLITICS OF ETHNIC COMMUNITIES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Cross-cultural study of politics of ethnic communities; emphasis on politics of black communities in the United States. Internal community politics and their local and national political systems. (Prereq 6 cr in social sciences)

Spring Qtr, Sec 1, T, 6:20-8:50, AndH 330, Nirtz

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

American Governmental Systems and Processes

Pol 3308 THE UNITED STATES CONGRESS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Internal organization, committee system, party leadership, norms, recruitment; legislative policy making; relationship with the president and bureaucracy; interest group, political party, and constituency influences on the congressional process. (Prereq 1001 or equivalent or #)

Spring Qtr, Sec 1, M, 6:20-8:50, BlegH 105, Smith

Pol 3310 TOPICS IN AMERICAN POLITICS: MASS MEDIA AND POLITICS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Analysis of role of mass media in politics; emphasis on television and electoral campaigns, news coverage versus newsmaking. Free press in democracy. (Prereq 1001 or #. A joint Day/Extension class)

Spring Qtr, Sec 1, T, 6:20-8:50, RarigC 616, Flanigan

(See also CSch 0213, Estranged Bedfellows: Freedom of the Press and Government)

Pol 3331 MINNESOTA GOVERNMENT AND POLITICS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

The Minnesota political system; demographic and cultural setting, political and governmental processes, contemporary policies. (No prereq; 1001 recommended)

Fall Qtr, Sec 1, W, 6:20-8:50, BlegH 130, Backstrom

Portuguese (Port)

(34 Folwell Hall: 625-5858)

College of Liberal Arts

Spanish and Portuguese

Textbooks for most Port courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Port. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Port 1001-1002-1003 not offered 1993-94.

Port 3602 INTRODUCTION TO BRAZIL. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Brazilian contemporary culture and society. Topics related to history, to culture (music, art, cinema, literature, architecture, theatre, popular culture, television), and to social problems (ethnicity, rain forest). (No prereq. Limited to 30)

Winter Qtr, ★Sec 1, M, 6:10-8:40, FolH 114

Port 3603 BRAZILIAN LITERATURE IN TRANSLATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Figures or topics of Brazilian literature, examined as a reflection of Brazilian society. Modern Brazilian fiction. Taught in English. (No prereq. Limited to 30)

Spring Qtr, ★Sec 1, W, 6:10-8:40, FolH 218

Practical Scholar

(See page 411)

Professional and Career Development

Business, industry, and management programs offered by the **Management Advancement Program** are designed to provide work-related training for people in corporate business, small business, and nonprofit or government settings. These noncredit programs offer both theory and practice in such areas as leadership, management, communications, computers, and finance. Programs are scheduled in daytime seminar and evening class formats and are held at convenient locations both on and off campus. Instructors are primarily University of Minnesota faculty and administrative staff or professionals from prominent local organizations. For further information and complete course listings and descriptions, call (612) 626-8713.

Psychology (Psy)

(N218 Elliott Hall: 625-4042)

College of Liberal Arts

Textbooks for most Psy courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Child Psychology; Educational Psychology; General College; Interdepartmental Study; The Compleat and Practical Scholar noncredit courses; and Women's Studies)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

William Grove, Associate Professor
William G. Iacono, Professor
Jerome Kroll, Adjunct Professor
Mary Ann Mattoon, Clinical Associate Professor
Mary J. Meadow, Clinical Professor
Gail B. Peterson, Associate Professor
Auke Tellegen, Professor

A major in Psychology can be completed in the evening.

Those courses required in the major are offered yearly. Interested students should discuss plans with an adviser (625-2500).

If you are contemplating a major in psychology, consult the Undergraduate Advising Office, 105 Elliott Hall (625-8520).

General Education—Courses recommended for nonmajors include 1001, 3011, 3031, 3051, 3061, 3101, 3135, 3201, 3604, 3617, and 5141.

B.A. Major Sequence

Required Preparatory Courses—1001, 1004-1005 (to be taken as soon as possible after 1001)

Major Requirements—At least 34 credits chosen as follows: 3801 or Stat 3011 (to be taken as soon as possible after 1001)

Two courses from 3011, 3031, 3051, 3061 or 5061, 5011, 5012-5013, 5014, 5015, 5019, 5031, 5034, 5051, 5054, 5062, 5137, 5609

Two courses from 3014, 3101, 3135 or 5135, 3201, 3604, 3617, 5136, 5138, 5141, 5202, 5205, 5206, 5501, 5701, 5702, 5703, 5704, 5705; CPsy 3303 or 5303, 3309 or 5301

Four elected 3xxx-5xxx-level psychology courses (a total of two from 3960, 3970, 3990 may be used)

Major project: 3902

All major courses must be taken on A-F grading except 3902 which may be taken A-F or S-N. At least four upper division courses in psychology must be taken on the Twin Cities campus.

Psychology majors, especially those considering graduate work, are urged to elect mathematics and natural, social, and physical science courses. Prospective graduate students also should take further work in statistics and computer programming. A limited number of child psychology courses may be completed through the Institute of Child Development (double psychology-child psychology majors are not permitted).

Minor Sequence—General Psychology—two courses from 3011, 3031, 3051, 3061 or 5061, 5011, 5012-5013, 5014, 5015, 5019, 5031, 5034, 5051, 5054, 5062, 5137, 5609; two courses from 3014, 3101, 3135 or 5135, 3201, 3604, 3617, 5136, 5138, 5141, 5202, 5205, 5206, 5501, 5701, 5702, 5703, 5704, 5705

All minor courses must be taken on A-F grading. At least two upper division courses in psychology must be taken on the Twin Cities campus.

The minor program must be approved by a psychology undergraduate adviser.

Minor Sequence—Natural Science—two courses from 3011, 5011, 5012-5013, 5014, 5015, 5019; two courses from 3031, 3051, 3061 or 5061, 5031, 5034, 5051, 5054, 5062, 5137, 5609

All minor courses must be taken on A-F grading. At least two upper division courses in psychology must be taken on the Twin Cities campus.

The minor program must be approved by a psychology undergraduate adviser.

Minor Sequence—Social Science

Required Preparatory Courses—1001, 3801 or Stat 3011 or equivalent

Minor Requirements—two courses from 3014, 3101, 3201, 3604, 3617, 5202, 5205, 5206; one course from 3135 or 5135, 5136, 5138, 5141, 5501, 5701, 5702, 5703, 5704, 5705; one elective 3xxx- or 5xxx-level psychology course from those listed as course options in the Social Science Minor Sequence.

All minor courses must be taken on A-F grading. At least two upper division courses in psychology must be taken on the Twin Cities campus.

The minor program must be approved by a psychology undergraduate adviser.

You need not be a major or minor in Psychology to register for these classes.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Psychology. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Continuing Education for Women (CEW) sections available in the following courses: Psy 3101, 3201

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Psy 1001 INTRODUCTION TO PSYCHOLOGY. 5 credits, tuition*: Resident \$350; Non-resident \$1015. (IS)

Introduction to the study of human behavior. Prerequisite for all advanced courses in psychology. (No prereq. Limited to 80)

Fall Qtr, ★Sec 1, MW, 6:20-8:15, SmithH 231

Fall Qtr, ★Sec 2, MW, 6:20-8:15, Phys 131

Fall Qtr, ★Sec 3, MW, 7-8:55, Richfield HS 244 (Limit 30)

Fall Qtr, ★Sec 4, TTh, 6:20-8:15, Phys 170

Winter Qtr, ★Sec 5, MW, 6:20-8:15, SmithH 231

Winter Qtr, ★Sec 6, MW, 6:20-8:15, Phys 210

Winter Qtr, ★Sec 7, TTh, 6:20-8:15, Phys 131

Winter Qtr, ★Sec 8, TTh, 6:20-8:15, Phys 210

Winter Qtr, ★Sec 9, TTh, 7-8:55, Roseville Area HS 145 (Limit 35)

Spring Qtr, ★Sec 10, MW, 6:20-8:15, Phys 210

Spring Qtr, ★Sec 11, MW, 6:20-8:15, Phys 133

Spring Qtr, ★Sec 12, TTh, 6:20-8:15, Phys 210

Spring Qtr, ★Sec 13, TTh, 6:20-8:15, Phys 131

Psy 1003 APPLICATION OF PSYCHOLOGY TO LIVING. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Psychology in personal relationships and in the achievement of mental health, centering, for the most part, around our fundamental needs; and exploration of principles highly applicable in the life of every person. (No prereq. May be taken before or after Psy 1001)

Fall Qtr, Sec 1, T, 6:20-8:50, Arch 60

Winter Qtr, Sec 2, M, 6:20-8:50, EltH N119

Spring Qtr, Sec 3, M, 6:20-8:50, Arch 60

Psy 1004-1005 INTRODUCTORY LABORATORY PSYCHOLOGY. 4 credits each quarter, tuition* each quarter: Resident \$280; Non-resident \$812.

Experiments with contemporary subject matter such as human and animal learning, problem solving, visual perception, measurement of general and special abilities and personality traits. (Prereq 1001 or ¶1001 for 1004; 1004 for 1005. Limited to 24)

Fall Qtr, 1004, ★Sec 1, M, 6:20-8:50, EltH 50-60

Fall Qtr, 1004, ★Sec 2, T, 6:20-8:50, EltH 150-160

Winter Qtr, 1004, ★Sec 3, T, 6:20-8:50, EltH 50-60

Winter Qtr, 1005, ★Sec 1, Th, 6:20-8:50, EltH 50-60

Spring Qtr, 1005, ★Sec 2, M, 6:20-8:50, EltH 50-60

Psy 3011 INTRODUCTION TO THE PSYCHOLOGY OF LEARNING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Basic methods. Fundamental concepts and principles governing the learning process. (Prereq 1005 or #)

Fall Qtr, Sec 1, M, 6:20-8:50, EltH N119, Peterson

Spring Qtr, Sec 2, M, 6:20-8:50, Arch 45, Peterson

Psy 3014 INTRODUCTION TO APPLIED PSYCHOLOGY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

History and survey of professional applications of psychology in work, school, and community settings. (Prereq 1001)

Spring Qtr, Sec 1, T, 6:20-8:50, NichH 216

Psy 3031 SENSATION AND PERCEPTION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Psychological, biological, and physical aspects of sensory experience in humans and animals. Emphasis on vision and hearing. (Prereq 1004)

Winter Qtr, Sec 1, T, 6:20-8:50, Arch 25

Spring Qtr, Sec 2, T, 6:20-8:50, SmithH 331

Psy 3051 INTRODUCTION TO COGNITIVE PSYCHOLOGY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Research and theoretical concepts in study of cognitive factors in perception, memory, reading, and problem solving. (Prereq 1005 or ¶1005)

Fall Qtr, Sec 1, T, 6:20-8:50, SmithH 121

Psy 3101 INTRODUCTION TO PERSONALITY. 4 credits, \$5101, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Concepts and issues in personality theory, personality research, and personality assessment. (Prereq 1001. Limited to 60)

Fall Qtr, ★Sec 1, T, 6:20-8:50, Phys 210, Tellegen

Spring Qtr, ★Sec 2, M, 1:30-4, MacP, Meadow.

Offered through Continuing Education for Women

Spring Qtr, ★Sec 3, T, 6:20-8:50, SmithH 231

Psy 3135 (replaces 3124) INTRODUCTION TO INDIVIDUAL DIFFERENCES. 4 credits, \$5135, tuition*: Resident \$294; Non-resident \$852.60.

Differential methods in study of human behavior. Impact and importance of individual differences in modern society; instruments of measurement and behavior prediction in differential psychology; major determinants of individuality. (Prereq 3801 or equivalent)

Winter Qtr, Sec 1, T, 6:20-8:50, EltH N119

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Psy 3201 INTRODUCTION TO SOCIAL PSYCHOLOGY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Survey of theories and research in social psychology. Includes the effects upon the individual's attitudes and behavior of other persons, mass communications, and group membership. (Prereq 1001)

Fall Qtr, Sec 1, M, 9:30 a.m.-12, MacP. Offered through Continuing Education for Women Fall Qtr, Sec 2, M, 6:20-8:50, Phys 133

Spring Qtr, ★Sec 3, M, 6:20-8:50, Roseville Area HS 244 (Limit 35)

Psy 3604 INTRODUCTION TO ABNORMAL PSYCHOLOGY. 4 credits, \$5604, tuition*: Resident \$294; Non-resident \$852.60. (IS)

The field of abnormal psychology. Etiologies of behavior disorders; discussion of available treatments. (Prereq 1001. Limited to 75)

Fall Qtr, ★Sec 1, T, 6:30-9, Roseville Area HS 146 (Limit 35)

Fall Qtr, ★Sec 2, Th, 6:20-8:50, EltH N119, Iacono

Winter Qtr, ★Sec 3, Th, 6:20-8:50, SmithH 331

Winter Qtr, ★Sec 4, W, 6:20-8:50, EltH N119, Iacono

Spring Qtr, ★Sec 5, M, 6:20-8:50, SmithH 331

Spring Qtr, ★Sec 6, W, 6:20-8:50, SmithH 331

Spring Qtr, ★Sec 7, T, 7-9:30, Richfield HS 143 (Limit 35)

Psy 3607 SURVEY OF CLINICAL INTERVENTION METHODS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Introduction to a range of therapeutic procedures for dealing with abnormal behavior in children and adults. The focus will be on the theory and philosophy underlying the particular schools of therapy rather than emphasizing specific methods of behavior change. (Prereq 3604 or 5604)

Spring Qtr, Sec 1, Th, 6:20-8:50, NichH 207

Psy 3617 INTRODUCTION TO CLINICAL PSYCHOLOGY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Survey of historical developments and contemporary issues in clinical psychology. Focuses upon relevant research and clinical trends in psychological assessment methods and various prevention and intervention strategies. (Prereq 3604 or 5604H, 3801 or equivalent)

Fall Qtr, Sec 1, W, 6:20-8:50, EltH N119, Grove

Psy 3801 INTRODUCTION TO STATISTICAL METHODS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Quantification in research problems in psychology. Descriptive and inferential statistics, hypothesis testing, nonparametric statistics. Examples from various areas of psychology. (Prereq 1001, Math 0009 or equiv. Limited to 50)

Fall Qtr, ★Sec 1, M, 6:20-8:50, NichH 213

Fall Qtr, ★Sec 2, Th, 6:20-8:50, Arch 15

Winter Qtr, ★Sec 3, T, 6:20-8:50, SmithH 331

Winter Qtr, ★Sec 4, W, 6:20-8:50, FordH 349

Winter Qtr, ★Sec 5, Th, 6:20-8:50, Arch 15

Spring Qtr, ★Sec 6, M, 6:20-8:50, Arch 25

Spring Qtr, ★Sec 7, T, 6:20-8:50, EltH N119

Spring Qtr, ★Sec 8, W, 6:20-8:50, EltH N119

Psy 3902 MAJOR PROJECT IN PSYCHOLOGY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Seminar for completion of the undergraduate major project paper. Psy 3902 is a major requirement for psychology majors; it is offered only occasionally through Extension Classes to meet student needs. (Prereq 1005, 3801, and jr or sr psychology major. Limited to 25)

Winter Qtr, ★Sec 1, T, 7:05-8:50, Arch 60

Spring Qtr, ★Sec 2, T, 7:05-8:50, NichH 209

Psy 3911 PSYCHOLOGY OF RELIGION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Topical approach to the study of religious behavior. Areas covered include guilt, alienation, transcendence, altered states of consciousness, impulse control, conscience, values and beliefs, symbolic behavior, self-actualization, psychopathology, and the psychological interpretation of religious scriptures. (Prereq 1001 or #)

Spring Qtr, Sec 1, M, 6:20-8:50, EltH N119, Meadow

(See also Religious Studies)

Psy 3960 SPECIAL TOPICS: PSYCHIATRY AND SOCIAL CONTROL. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Topics include definitions of mental illness, social labeling, anti-psychiatry and the writings of Thomas Szasz, deinstitutionalization, involuntary hospitalization, homelessness, civil commitment, right to refuse treatment, cocaine mothers, insanity defense, release from hospital. (No prereq. Limited to 40)

Winter Qtr, ★Sec 1, T, 6-8:30, MoosT 2-520, Kroll

Spring Qtr, ★Sec 2, T, 6-8:30, MoosT 2-580, Kroll

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Psy 3960 SPECIAL TOPICS: OVERVIEW OF PSYCHOLOGICAL TESTING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Survey of issues in the development and administration of psychological tests. Purposes and types of tests, test administration and scoring, characteristics of good tests. Examples from the traditional domains of psychological assessment including ability, personality, guidance, and personnel selection. (Prereq 1001, 3801. Limited to 50)

Spring Qtr, ★Sec 3, M, 6:20-8:50, SmithH 231

Psy 5105 THE ANALYTICAL PSYCHOLOGY OF C.G. JUNG. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Major Jungian psychological theories: extroversion-introversion, function types, complexes, ego, persona, shadow, animus, anima, self, personal and collective unconscious, symbolism, psychic energy, individuation, dream interpretation, psychotherapy. Relevant empirical research and clinical material. (Prereq 3101 or 5101 or #. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, T, 6:20-8:50, NichH 216, 109, 122, Mattoon

(See also CSch 0253, Fundamentals of Jungian Psychology)

Psy 5141 PSYCHOLOGY OF WOMEN. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Psychological and physical sex differences; developmental and environmental influences on dependency, aggression, achievement motivation, and achievement. Sex roles and sexuality during various life phases. (Prereq 1001. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, T, 5:30-8, BuH 120

Spring Qtr, Sec 2, M, 5:30-8, FordH 115

Psy 5202 ATTITUDES AND SOCIAL BEHAVIOR. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Attitude theory, measurement, and attitude change research in social psychology. The structure, function, and formation of attitudes; the relationship between attitudes and various social behaviors; basic

principles of attitude change. (Prereq 3201 or #. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, W, 6:20-8:50, EltH N119

Psy 5205 (formerly 3206) APPLIED SOCIAL PSYCHOLOGY. 4 credits. **Not offered 1993-94.**

Psy 5701 PERSONNEL AND INDUSTRIAL PSYCHOLOGY. 4 credits. tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Application of principles of individual differences and psychological measurement to problems of recruiting, selecting, evaluating, and training members of ongoing organizations. Topics include job analysis, job behavior description, performance measurement, selection and placement strategies, minority group employment, and utility of organizational strategies in the selection and occupational placement of persons. (Prereq 3801 or equivalent, 8 cr in psychology, or #. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, Th, 6:20-8:50, NichH 207

(See also Industrial Relations)

Psy 5703 PSYCHOLOGY OF ORGANIZATIONAL TRAINING AND DEVELOPMENT. 4 credits. **Not offered 1993-94.**

For information on noncredit workshops or conferences in psychology, please contact the Department of Professional Development and Conference Services, Registrar, Nolte Center for Continuing Education; telephone 625-6616.

Public Affairs (PA)

(235 Humphrey Center: 625-3497)

Humphrey Institute of Public Affairs

Textbooks for most PA courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also The Compleat and Practical Scholar non-credit courses; Economics; Interdepartmental Study; Political Science; International Relations; Sociology; and General College)

Sheila Ards, Senior Fellow

Babak Armajani, Senior Fellow

Richard S. Bolan, Professor of Planning and Public Affairs

John Brandl, Professor of Public Affairs and Planning

Candace Campbell, Research Fellow

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Charles Finn, Fellow
Sandra Gardebring, Senior Fellow
Barbara Lukermann, Senior Fellow
Lee Munnich, Senior Fellow
Joe Nathan, Senior Fellow
David Rafter, Senior Fellow

PA 5113 PUBLIC SERVICES REDESIGN. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Study of the theory, strategy, politics, and some of the practical mechanics required to adapt the public service system, given the constraints on resources and a continuing pressure for effectiveness and equity. In-class and out-of-class interviews of persons involved in redesign. (Prereq written #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★○Sec 1, M, 6:30-9, HHCtr 30,
Brandl

PA 5200 INTRODUCTION TO PLANNING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Concepts and issues in planning as a profession. Historical development of planning as a public activity. The organization and role of planning in public agencies and private organizations. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, MW, 6:15-7:30, HHCtr 25,
Lukermann

PA 5201 PLANNING THEORY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Theory of planned action. Philosophical roots of planning. Models of planned change. Planning theory and planning practice. (Prereq grad or adult special or Δ. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★○Sec 1, W, 6:15-8:45, HHCtr 25,
Bolan

PA 5211 GROUP TECHNIQUES IN PUBLIC AFFAIRS AND PLANNING. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

By the end of this survey course participants should have a good grasp of group techniques as they are commonly used in public affairs and planning, will be able to use several of them, and will know where and how to find out more about them. Participants should also know how to assemble and manage a group decision support system. This course is a complement to courses that teach more analytic, technical, or quantitative skills. Both sets of skills are important and public endeavors rarely are successful if capable work isn't done using both sets. (Prereq grad or adult special or Δ. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, T, 7-9:30, HHCtr 30

PA 5221 LAW AND URBAN AFFAIRS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Designed primarily for the non-lawyer who is interested in understanding how the law affects the operation of major functions of urban governments, particularly those functions having to do with planning, land use, and housing. The objective of the course is to acquaint non-lawyers with the major legal concepts and issues affecting urban planning and development; to provide an understanding of how to make creative use of law, legal ideas and methods in the resolution of urban policy problems, and to develop an appreciation of the importance of the fundamental legal powers on urban governments and the constitutional, statutory, and judicial limitations on exercise of those powers by governments, agencies, and officials. (Prereq grad or adult special or Δ. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Spring Qtr, ★○Sec 1, W, 6:15-8:45, HHCtr 25

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

PA 5230 STRATEGIC PLANNING AND MANAGEMENT. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Strategy formulation, adoption, and implementation in government and nonprofit agencies. Dealing with agency strengths and weaknesses and external opportunities and threats. Stakeholder management. Case examples. (Prereq upper division status or written #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 20 Extension students)

Winter Qtr, ★○Sec 1, T, 7-9:30, HHCtr 25

PA 5231 STRATEGY AND TACTICS IN PROJECT PLANNING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

How goals and contextual factors affect planning. Appropriate strategic and tactical choices to make during the planning process; case examples of planning for public programs, projects, products, or services. (Prereq grad student, adult special or Δ. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Winter Qtr, ★○Sec 1, Th, 7-9:30, HHCtr 25,
Bolan

PA 5291 URBAN TRANSPORTATION POLICY AND PLANNING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Covers subjects such as transportation policy formulation, transit and municipal model planning, transportation and land use relationships, transportation systems analysis and design, financing transportation systems, and the interactions of these elements in the political decision-making process. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, Th, 7-9:30, HHCtr 30, Rafter

PA 5414 MULTIDISCIPLINARY PERSPECTIVES ON AGING. 4 credits, \$AdEd 5440, CPsy 5305, Educ 5440, HSU 5009, Phar 5009, SAHP 5009, PubH 5737, Soc 5960, SW 5024. Tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See Soc 5960 for description. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with AdEd 5440, CPsy 5305, Phar 5009, HSU 5009, PubH 5737, SW 5024, Soc 5960. A joint Day/Extension class)

Fall Qtr, ★○Sec 1, MW, 4:40-6:25, MoosT 2-690
(Limited to a combined total of 37 Extension students)

Spring Qtr, ○Sec 2, MW, 4:40-6:25, MoosT 2-690

PA 5491 TOPICS IN SOCIAL POLICY: EDUCATION POLICY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Minnesota has become a national leader in attempts to improve public education. This course is a topics course in the Humphrey Institute's Social Policy Concentration and will give students a broad introduction to the issues involved and strategies employed by those trying to have an impact at the state legislature on education policy. The course will include various viewpoints on Minnesota's public school choice legislation and proposals for greater parent input into the educational system. Students will talk with education reform activists and help produce a document discussing tactics employed by those trying to influence the Legislature. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, M, 4:40-6:25, BlegH 105,
Nathan

PA 5594 TOPICS IN ECONOMIC AND COMMUNITY DEVELOPMENT: TOOLS AND TECHNIQUES OF COMMUNITY AND ECONOMIC DEVELOPMENT. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Examines the contexts and motivations behind economic development activities, alternative strategies available to communities to organize and initiate successful economic development projects, the range of tools and techniques to conduct economic development analysis and planning (including market analysis, feasibility studies, and investment analysis), and the different means available to implement economic development strategic plans. Integrates a review of the theories underlying economic development practice, the methods used to analyze and organize economic development, and case studies in practice. Introduces students to local practitioners and experts in the field and provides an opportunity for students to

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

develop skills used in today's economic development practice. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension Students)

Spring Qtr, ★○Sec 1, Th, 6:15-8:45, HHCtr 30, Campbell

PA 5791 TOPICS IN TECHNOLOGY, ENERGY, AND ENVIRONMENTAL POLICY: SCIENCE, TECHNOLOGY, AND INTERNATIONAL AFFAIRS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Examines the ways in which science and technology in the closing decade of the 20th century are directly affecting the global economic, political, and social environment; and the consequent alterations in both the agenda for international negotiation and the practical approaches available to nations in pursuing their interests. Within this larger context, the specific choices for American foreign policy will be stressed. The subject will be approached on three levels: it will examine at the conceptual level how the dynamics of technological development and specific advances in science and technology affect relations among nations in such matters as autonomy, national security, distribution of power, cultural identity, and international cooperation; it will illustrate the conceptual issues with examples from the current international science; and it will consider the feasibility of various approaches to determining national policy and negotiating international agreements in areas affected by these S&T considerations. (Prereq grad or adult spec or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 15 Extension students)

Fall Qtr, ★○Sec 1, M, 6:15-8:45, HHCtr 60, Keller

Public Health (PubH)

(A302 Mayo: 624-6669)

School of Public Health

Textbooks for most PubH courses are available at the Health Sciences Bookstore (625-8600).

Mila Aroskar, Associate Professor, Health Management and Policy

Linda H. Bearinger, Assistant Professor, School of Nursing

Rondell S. Berkeland, Director, Occupational Therapy Program

Lester E. Block, Associate Professor, Public Health Administration

Edward Ehlinger, Adjunct Assistant Professor, Community Health Education

Maymie Eschwey, Lecturer, Maternal and Child Health

David Feinwachs, Adjunct Assistant Professor, Public Health Administration

David Garloff, Director, Health Sciences Learning Resources Center

Judith Garrard, Professor, Health Services Research

John Hung, Assistant Professor, Medical School

Robert Kane, Professor, Health Services Research

U. Beate Krinke, Instructor, Public Health Nutrition

Ruth Ellen Luehr, Instructor, Maternal and Child Health

Nicole Lurie, Associate Professor, Health Services Research; Medical School

Patricia McGovern, Instructor, Environmental Health

Elizabeth McIntosh, Lecturer, Maternal and Child Health

Gary W. Olmstead, Adjunct Assistant Professor, Environmental Health

Sharon Ostwald, Associate Professor, School of Nursing

Michael D. Resnick, Associate Professor, Healthcare Administration

Frank S. Rhame, Associate Professor

R. A. Robinson, Lecturer, College of Veterinary Medicine

James Rothenberger, Instructor, Community Health Education

Stanton Shanedding, Adjunct Assistant Professor, Maternal and Child Health

John M. Shutske, Adjunct Assistant Professor, Agricultural Engineering

Rexford D. Singer, Associate Professor, Environmental Health

Barbara A. Spradley, Associate Professor, Public Health Administration

Mary Story, Associate Professor, Public Health Nutrition

Robert ten Bensel, Professor, Maternal and Child Health

Fay Thompson, Director, Environmental Health and Safety

J. Pamela Weiner, Instructor, Maternal and Child Health

John T. Wendt, Adjunct Assistant Professor of Law

John Yoakum, Lecturer, Maternal and Child Health

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in several Public Health categories. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

International Internships and Study Abroad—Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

(See also Alcohol and Drug Counseling listing with Family Social Science; Health Science Units; General College; and Research Explorations [REX])

Public Health Categories

Community Health Education (begins page 305)

- 3001 Personal and Community Health
- 3003 Fundamentals of Alcohol and Drug Abuse
- 5003 Fundamentals of Alcohol and Drug Abuse
- 5010 Public Health Approaches to AIDS
- 5012 Fundamentals of Health Behavior Change
- 5013 Interdisciplinary Team Training in Health Services Delivery
- 5014 Behavioral Medicine I: Theory, Research, and Practice
- 5040 Dying and Death in Contemporary Society
- 5064 The Teaching-Learning Process in the Health Care Setting

Environmental and Occupational Health (begins page 307)

- 5150 Principles of Environmental Health Law
- 5150 Occupational Health Law
- 5150 Pollution Control Law
- 5150 Consumer Products Law
- 5151 Environmental Health
- 5165 The Political Process in Public Health
- 5192 Occupational Safety
- 5198 Safety Engineering Fundamentals
- 5253 Introduction: Hazardous Waste Management
- 5261 General Environmental Toxicology

Epidemiology (begins page 308)

- 3301/5301 Perspectives: Interrelationships of People and Animals in Society Today

Health Services Research and Policy (begins page 309)

- 5806 Principles of Public Health Research
- 5852 Program Evaluation in Health and Mental Health Settings
- 5863 Quality Assurance
- 5868 Principles of Health Services Research

Maternal and Child Health (begins page 309)

- 5610 Principles of Maternal and Child Health
- 5616 Rights of Children and Youth: Abuse and Neglect
- 5622 Women's Health: Issues and Controversies
- 5637 Seminar: Cross-Cultural Health Issues in Minnesota
- 5639 Prevention: Theory, Practice, and Application in Public Health Services
- 5648 Sexual Orientation—Issues for Adolescents

Public Health Administration (begins page 310)

- 5711 Public Health Law
- 5727 Health Leadership and Effecting Change
- 5732 Competition, Regulation, Rationing, and the Delivery of Health Services
- 5734 Ethical Dimensions of Public Health
- 5737 Multidisciplinary Perspectives on Aging

Public Health Nutrition (begins page 311)

- 5932 Nutrition: Adults and the Elderly
- 5935 Adolescent and Child Nutrition

Public Health Workshops (begins page 308)

- 5643 Sexual Abuse of Children
- 5648 Violence and Aggression Across the Life Cycle
- 5650 Teenage Pregnancy and Parenting: Models for Intervention

Community health education

PubH 3001 PERSONAL AND COMMUNITY HEALTH. 3 credits, \$3004, tuition*: Resident \$306; Non-resident \$887.40.

Fundamental principles of health conservation and disease prevention. (No prereq.)

Winter Qtr, Sec 1, M, 7-9:30, MoosT 2-530, Ehlinger

PubH 3003 FUNDAMENTALS OF ALCOHOL AND DRUG ABUSE. 2 credits, \$3004, HSU 3003, 5032, tuition*: Resident \$204; Non-resident \$591.60.

Lecture, discussion, and special readings on the scientific, socio-cultural, and attitudinal aspects of alcohol and other drug abuse problems, with special emphasis on incidence, prevalence, high risk populations, prevention and intervention. (No prereq. Meets concurrently with PubH 5003, HSU 3003, HSU 5032)

Spring Qtr, Sec 1, Th, 6:35-8:35, MoosT 2-520, Rothenberger

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

PubH 5003 FUNDAMENTALS OF ALCOHOL AND DRUG ABUSE. 2 credits, §PubH 3003, HSU 3003, 5032, tuition*: Resident \$204; Non-resident \$591.60; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

See description for PubH 3003. (Prereq sr, post baccalaureate adult special or graduate student. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3003, HSU 3003, 5032; different exam requirements)

Spring Qtr, Sec 1, Th, 6:35-8:35, MoosT 2-520, Rothenberger

PubH 5010 PUBLIC HEALTH APPROACHES TO AIDS. 3 credits, §HSU 5010, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

A survey of HIV infection from a public health perspective with emphasis on intervention. Topics include epidemiological and clinical features of HIV infection, the impact and response of affected communities and populations, and behavior change principles as they apply to communities, schools, and social policy. Community resources supplement lectures with case presentations. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with HSU 5010. A joint Day/Extension class)

Fall Qtr, ●Sec 1, W, 4:40-7:20, MoosT 2-530, Rothenberger, Rhame

Spring Qtr, ●Sec 2, W, 4:40-7:20, MoosT 2-620, Rothenberger, Rhame

(See also Anth 5920, Anthropology of AIDS and CSch 0540, The Biology of AIDS)

PubH 5012 FUNDAMENTALS OF HEALTH BEHAVIOR CHANGE. 3 credits, §5804, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Principles, applications, and translation of early and existing paradigms and theories of learning into principles of health behavior change. Role of motivation, specific behavior change approaches (e.g., self-reinforcement, contingency contracting, modeling, biofeedback, and self-regulation). **Must be taken A-F.** (Prereq Public Health grad student, grad student or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ●Sec 1, M, 4:40-7:20, Mayo A270, Hung

PubH 5013 INTERDISCIPLINARY TEAM TRAINING IN HEALTH SERVICES DELIVERY. 3 credits, §HSU 5001, §SW 5013, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Interdisciplinary team development with application to public health, human service projects, didactic content, experiential methods, activities to develop attitudes, skills essential to effective team goal setting, decision making, problem-solving, and task accomplishment. (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with HSU 5001, SW 5013. A joint Day/Extension class limited to a combined total of 12 Extension students from health or helping professions)

Spring Qtr, ★●Sec 1, W, 5:45-8:45, HSUnitF 2-110, 2-140, Berkeland

PubH 5014 BEHAVIOR MEDICINE I: THEORY, RESEARCH, AND PRACTICE. 3 credits, §5853, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Survey of the history of and current issues in behavioral medicine and health psychology. Emphasis on stress and its management, life-style intervention, preventive measures for public health, psychology of health and illness behaviors, self-management and health education. (Prereq Psychology grad student, professional in health-related disciplines, or health sciences grad student or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, M, 4:40-7:20, Mayo D326, Hung

PubH 5040 DYING AND DEATH IN CONTEMPORARY SOCIETY. 3 credits, §HSU 5040, Mort 5040, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Background information on concepts, attitudes, ethics, and lifestyle management related to dying, death, grief, and bereavement. Emphasis on preparing community health and helping professionals and educators for educational activities in this area. **Must be taken A-F.** (Prereq health science major, public health grad, education sr, mortuary science major or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with HSU 5040. A joint Day/Extension class)

Winter Qtr, ●Sec 1, W, 4:40-7:20, MoosT 2-690, Rothenberger and Mort Sci staff

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

PubH 5064 THE TEACHING-LEARNING PROCESS IN THE HEALTH CARE SETTING. 3 credits, \$HSU 5011, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Learning activities include lectures, discussions, written assignments, and projects. Activities designed to meet the professional needs of the student. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★**Q**Sec 1, M, 3:35-6:20, MoosT 2-571, 2-585, Garloff

Environmental and occupational health

PubH 5150 TOPICS IN ENVIRONMENTAL HEALTH: PRINCIPLES OF ENVIRONMENTAL HEALTH LAW. 1 credit, tuition*: Resident \$102; Non-resident \$295.80; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Among topics included are legal aspects of environmental decision making, legal processes, jurisdiction, and tort law. (No prereq. Students interested in graduate credit should inquiry at the time of registration. Limited to 30)

Winter Spec Term, ★Sec 1, T, 6-8, Jan. 4-Feb. 1, MoosT 2-690, Wendt

PubH 5150 TOPICS IN ENVIRONMENTAL HEALTH: OCCUPATIONAL HEALTH LAW. 1 credit, tuition*: Resident \$102; Non-resident \$295.80; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Among topics included are OSHA, Right-to-Know, Workers Compensation, and discrimination. (Prereq PubH 5150 sec 1. Students interested in graduate credit should inquiry at the time of registration. Limited to 30)

Winter Spec Term, ★Sec 2, T, 6-8, Feb. 8-Mar. 8, MoosT 2-690, Wendt. *No late fee through Feb. 1*

PubH 5150 TOPICS IN ENVIRONMENTAL HEALTH: POLLUTION CONTROL LAW. 1 credit, tuition*: Resident \$102; Non-resident \$295.80; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Among topics included are Federal Clean Air Act, Clean Water Act, RCRA, TOSCA, and FIFRA. (Prereq PubH 5150 sec 1. Students interested in graduate credit should inquiry at the time of registration. Limited to 30)

Spring Spec Term, ★Sec 3, T, 6-8, Mar. 29-Apr. 26, MoosT 2-690, Wendt

PubH 5150 TOPICS IN ENVIRONMENTAL HEALTH: CONSUMER PRODUCTS LAW. 1 credit, tuition*: Resident \$102; Non-resident \$295.80; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Among topics included are Food and Drug laws, Consumer Products Safety Commission, and housing legislation. (Prereq PubH 5150 sec 1. Students interested in graduate credit should inquiry at the time of registration. Limited to 30)

Spring Spec Term, ★Sec 4, T, 6-8, May 3-June 1, MoosT 2-690, Wendt *No late fee through Apr. 26*

PubH 5151 ENVIRONMENTAL HEALTH. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Methods for promoting human health and comfort by controlling the environment. (Prereq #. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, T, 7-9:30, MoosT 2-520, Singer

PubH 5165 THE POLITICAL PROCESS IN PUBLIC HEALTH. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Preparation for assuming leadership in health policy arena. Emphasis on policy development; political, legislative, and regulatory processes; and political strategies in public health. (Prereq grad student or #. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, Th, 4-7, MoosT 2-580, McGovern

PubH 5192 OCCUPATIONAL SAFETY. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Provides information on the development of occupational safety programs essential to the health and safety of the worker and integral to public health in general. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, **Q**Sec 1, M, 5:30-8:30, MoosT 2-580, Olmstead

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

PubH 5253 INTRODUCTION: HAZARDOUS WASTE MANAGEMENT. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Review of roles of public and private sectors as generators, disposers, and regulators of hazardous wastes; includes definitions, sources, transportation, handling, treatment, recovery, disposal, and public health implications. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, MW, 4-5:15, MoosT 2-520, Thompson

PubH 5261 GENERAL ENVIRONMENTAL TOXICOLOGY. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Application of basic biochemical, and physiological principles; assessment of potential health hazards; approaches to solution of toxicological problems. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ●Sec 1, TTh, 5:30-7, MoosT 2-530

Epidemiology

PubH 3301 PERSPECTIVES: INTERRELATIONSHIPS OF PEOPLE AND ANIMALS IN SOCIETY TODAY. 2 or 3 credits, \$5301, 5303, 5304, §CVM 3100, tuition* each credit: Resident \$102; Non-resident \$295.80.

Interrelationships of people and animals from several viewpoints. The social, economic, and health consequences of these relationships including issues such as pets and people sharing an urban environment, animal rights, and the influence of differences in cultures on animal-human relationships. (No prereq. Meets concurrently with 5301 and CVM 3100. A joint Day/Extension class)

Spring Qtr, ●Sec 1, T, 4-5:40, AnScVM 125, StP Campus, Robinson

PubH 5301 PERSPECTIVES: INTERRELATIONSHIPS OF PEOPLE AND ANIMALS IN SOCIETY TODAY. 2 or 3 credits, §3301, 5303, 5304, §CVM 3100, tuition* each credit: Resident \$102; Non-resident \$295.80; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

See description for PubH 3301. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3301 and CVM 3100. A joint Day/Extension class)

Spring Qtr, ●Sec 1, T, 4-5:40, AnScVM 125, StP Campus, Robinson

Public Health One-Day, One-Credit Workshops—Registrations must be received by the University at least 10 days prior to the date of the workshop. Continuing Education Units (CEUs) are not available.

PubH 5643 SEXUAL ABUSE OF CHILDREN. 1 credit, tuition* (includes \$15 special fee): Resident \$117; Non-resident \$310.80; Resident Graduate credit \$114; Non-resident Graduate credit \$213; Resident Graduate School credit \$186; Non-resident Graduate School credit \$357.

Designed to acquaint professionals and community persons with the issues surrounding sexual abuse of children. Historical overview, definitions, dynamics, outcomes, treatment, and function of the school and community in the prevention of sexual abuse of children included. *Offered via interactive television between two sites, with students at both locations.* (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 60)

Fall Spec Term, ★Sec 1, Sa, 8 a.m.-4:30, Oct. 9, MoosT 5-125, ten Bensel. Late registrations accepted with \$5 late fee from 7:30 to 8 a.m. *No late fee through Oct. 1*

PubH 5648 VIOLENCE AND AGGRESSION ACROSS THE LIFE CYCLE. 1 credit, tuition* (includes \$15 special fee): Resident \$117; Non-resident \$310.80; Resident Graduate credit \$114; Non-resident Graduate credit \$213; Resident Graduate School credit \$186; Non-resident Graduate School credit \$357.

Presentation of the latest theories and practice relative to intra-family violence across the life span. Following the ecological model, the course will cover fetal, child, adolescent, spouse, and elder abuse. Emphasis placed on prevention programs. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 60)

Winter Spec Term, ★Sec 2, Sa, 8 a.m.-4:30, Jan. 22, 1994, MoosT 2-520, ten Bensel. Late registrations accepted with \$5 late fee from 7:30 to 8 a.m. *No late fee through Jan. 14*

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

PubH 5650 TEENAGE PREGNANCY AND PARENTING: MODELS FOR INTERVENTION. 1 credit, tuition* (includes \$15 special fee) Resident \$117; Non-resident \$310.80; Resident Graduate credit \$114; Non-resident Graduate credit \$213; Resident Graduate School credit \$186; Non-resident Graduate School credit \$357.

A course developed for health/social service providers and educators working with youth around issues of pregnancy, abortion, parenting, and adoption. It is a blend of theory and application, grounded in a model of adolescent development. It is designed to enhance understanding and skills for effectively addressing issues, counseling adolescents, and developing community-based programs for teenage pregnancy and parenting. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 60)

Fall Spec Term, ★Sec 1, Sa, 8 a.m.-4:30, Oct. 30, MoosT 2-520 Resnick, Bearinger. Late registrations accepted with \$5 late fee from 7:30 to 8 a.m. *No late fee through Oct. 15*

Health services research and policy

PubH 5806 PRINCIPLES OF PUBLIC HEALTH RESEARCH. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Critical evaluation of public health research literature, planning of independent research projects, formulation of the research question, research design, sampling techniques, use of research concepts, and data analysis. Questionnaires, interviews and data analysis techniques. (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ★Sec 1, MW, 3:35-5:30, MoosT 2-650, Garrard

PubH 5852 PROGRAM EVALUATION IN HEALTH AND MENTAL HEALTH SETTINGS. 4 credits, tuition*: Resident \$408; Non-resident \$1183.20; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Overview of evaluation, models of evaluation, objectives of an evaluative study, sampling of subjects, methods of data collection, methodological designs interpretation of data, preparation of final report, and ethical and political considerations. (Prereq public health or grad student, 5806 or equivalent research methods course, basic statistics course. Qualified students may register for graduate credit at the Uni-

versity of Minnesota. A joint Day/Extension class) Winter Qtr, ★Sec 1, MW, 3:35-5:30, Mayo A269, Garrard

PubH 5863 QUALITY ASSURANCE. 2 credits, tuition*: Resident \$204; Non-resident \$591.60; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Examines the history of approaches to assessing and assuring quality of care. Special attention is devoted to recent activities around small area variation: outcomes, appropriateness, and effectiveness. Both the theory and specifics of alternative approaches and their interpretations are addressed. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class) Winter Qtr, ★Sec 1, W, 3:35-5:30, Mayo A367, Kane, Lurie

PubH 5868 PRINCIPLES OF HEALTH SERVICES RESEARCH. 2 credits, tuition*: Resident \$204; Non-resident \$591.60; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Examines the disciplinary contributions to health services and traces how health services research can influence policy using a variety of best case examples to examine the breadth of health services research. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ★Sec 1, W, 3:35-5:30, Mayo D326, Kane

Maternal and child health

(See also Child Psychology; Child and Adolescent Psychiatry; and Youth Studies)

PubH 5610 PRINCIPLES OF MATERNAL AND CHILD HEALTH. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

For those who work or plan to work in programs which deliver services to families. Introduction to maternal and child health with emphasis on terminology, principles, and concepts of primary care, health maintenance, preventive care, organization, and evaluation. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 100 Extension students)

Fall Qtr, ★Sec 1, T, 4:40-7:10, MoosT 2-620, ten Bensele

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

PubH 5616 RIGHTS OF CHILDREN AND YOUTH: ABUSE AND NEGLECT. 4 credits. §HSU 5019, tuition*: Resident \$408; Non-resident \$1183.20; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368. (IS 5642)

A learning experience on needs and rights of children and parents and with the neglect and abuse of children. Historical and legal aspects, identification and reporting procedures, family assessment and treatment modalities, follow-up processes, research, prevention and the implications for societal action. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 100 Extension students) Winter Qtr, ★●Sec 1, MW, 4-5:45, MoosT 2-620, ten Bensel

PubH 5622 WOMEN'S HEALTH: ISSUES AND CONTROVERSIES. 4 credits, tuition*: Resident \$408; Non-resident \$1183.20; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Issues and controversies affecting women's health care from a historical perspective and public health vantage point. Contrasts methods of health care delivery, professional and consumer education, and addresses current literature. Includes specific health needs of underserved women in the population. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40) Spring Qtr, ★Sec 1, Th, 5:45-9:05, Mayo A367, Weiner

(See also Women's Studies)

PubH 5637 SEMINAR: CROSS-CULTURAL HEALTH ISSUES IN MINNESOTA. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

For those who wish to explore health issues and "health culture" of four ethnic communities in Minnesota: Hmong, Hispanic, black, and American Indian. Seminar format focuses on cultural factors that influence health and health services. (Prereq Health or Community Professional. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Spring Qtr, ★Sec 1, T, 4:45-7:30, Mayo A269, Eschwey, McIntosh

PubH 5639 PREVENTION: THEORY, PRACTICE AND APPLICATION IN PUBLIC HEALTH SERVICES. 4 credits, tuition*: Resident \$408; Non-resident \$1183.20; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Designed for students (undergraduate, graduate, or continuing education) and professionals in health and related disciplines who wish to explore the current issues and controversies centered around the idea of prevention and how it relates to the health services. Emphasis will be on history, prevention as an idea, terminology, lifestyle intervention, programs and legislative issues, education, roles and the implications for societal action. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Winter Qtr, ★Sec 1, T, 4:15-7, Mayo A270, Shanedling

PubH 5648 SEXUAL ORIENTATION—ISSUES FOR ADOLESCENTS. 2 credits, tuition*: Resident \$204; Non-resident \$591.60; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

An exploration of adolescent sexual orientation from the perspective of individual identity, impact of the community, and response of the community toward gay/lesbian/bisexual youth; and interventions or roles of professionals in the school and community. **Must be taken A-F.** (Prereq B.A. in education, health, or social service. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, Th, 4-7, Mayo A-269, Luehr, Yoakum

Public health administration

PubH 5711 PUBLIC HEALTH LAW. 4 credits, tuition*: Resident \$408; Non-resident \$1183.20; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Introductory course. Basic concepts of the law, legislative process, legal cases for the existence and administration of public health programs. Legal aspects of current public health issues and controversies and the regulatory role of the government in the health services system. (Prereq Public Health student or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5)

Spring Qtr, ★●Sec 1, M, 4:40-7:25, Mayo D326, Feinwachs

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

PubH 5727 HEALTH LEADERSHIP AND EFFECTING CHANGE. 3 credits, §HSU 5007, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Application of a broad theoretical base in planned change to solve managerial and organizational problems in students' roles as leaders in the health professions. (Prereq PubH grad or written #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with HSU 5007. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★●Sec 1, W, 4:40-7:25, Mayo D326, Spradley

PubH 5732 COMPETITION, REGULATION, RATIONING, AND THE DELIVERY OF HEALTH SERVICES. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Emergence of competition as a major factor in the delivery of health services and examination of current trends, proposals, regulatory alternatives, alternative delivery system, reactions and behavior of providers, advertising and marketing, role of antitrust agencies and the courts related to competition with a focus on public health implications. (Prereq public health student, grad student, health-related professional, or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 25 Extension students)

Spring Qtr, ★●Sec 1, W, 3:35-6:35, MoosT 2-530, Block

PubH 5734 (formerly 5516) ETHICAL DIMENSIONS OF PUBLIC HEALTH. 1 credit, §5516, tuition*: Resident \$102; Non-resident \$295.80; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342. Examination of ethical issues and dilemmas that confront public health professionals and agencies with discussion of how ethical/value aspects interface with political, legal, economic, and cultural considerations. **Must be taken S-N.** (Prereq grad student or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Spec Term, ★●Sec 1, W, 4:40-6:25, Sept. 29, Oct. 6, 13, 27, Nov. 3, Mayo A367, Aroskar

PubH 5737 (formerly 5520) MULTIDISCIPLINARY PERSPECTIVES ON AGING. 4 credits, §AdEd 5440, §CPsy 5385, §HSU 5009, §Phar 5009, §PubH 5520, §PA 5414, §SW 5024, §Soc 5960, tuition*: Resident \$408; Non-resident \$1183.20; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Sociological, biological, psychological aspects of aging; theories of aging; death and bereavement; issues and problems of older adults in America; human services and their delivery systems (health, nutrition, long-term care, education; public policy and legislation; environment and housing; retirement). (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with AdEd 5440, CPsy 5305, SW 5024, HSU 5009, PA 5414, Soc 5960, Phar 5009)

Fall Qtr, ●Sec 1, MW, 4:40-6:25, MoosT 2-690, Ostwald, AUCA Faculty (A joint Day/Extension class)

Spring Qtr, Sec 2, MW, 4:40-6:25, MoosT 2-690, Ostwald, AUCA Faculty

(See also GC 1136, Biological Aspects of Aging)

Public health nutrition

PubH 5932 NUTRITION: ADULTS AND THE ELDERLY. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Review of current literature and research on nutrient needs and factors affecting nutritional status of adults, especially the elderly; emphasis on selected population groups; programs to meet special needs. (Prereq 3000-level nutrition course or equivalent or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ●Sec 1, M, 4-6:45, MoosT 2-580, Krinke

(See also REX 0301, Nutrition and Oral Health of the Elderly)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

PubH 5935 CHILD AND ADOLESCENT NUTRITION. 3 credits, tuition*: Resident \$306; Non-resident \$887.40; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Explores current nutrition issues and research in the school-age child and adolescent. Emphasis on psychological, social, and cultural factors which influence food behavior, nutrient intake, and nutritional needs of school-age youth. Includes eating disorders and nutrition for athletes. (Prereq 3000-level nutrition course or equivalent or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 8 Extension students)

Winter Qtr, ★○Sec 1, M, 3:35-6:35, Mayo A270, Story

Public Policy

(See courses in Public Affairs, History, The Compleat Scholar noncredit courses, and Political Science)

Real Estate

Real Estate courses, formerly offered by the University, were transferred to the Minnesota Center for Real Estate and Housing Education, College of Business, St. Cloud State University, and courses held in the University Technology Center, 1313 Fifth Street S.E., Minneapolis, MN 55414.

For current information, call (612) 379-3891.

(See related courses in Architecture; Business Law; Finance; Geography; Housing; Public Affairs)

Recreation, Park, and Leisure Studies (Rec)

(203 Cooke Hall: 625-5300)

College of Education

(School of Kinesiology and Leisure Studies)

Textbooks for most Rec courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Bruce D. Anderson, Associate Professor

Mary Jo Kane, Associate Professor

Leo McAvoy, Jr., Professor

Stuart Schleien, Associate Professor

John Schultz, Associate Professor

Sports Management—The School of Kinesiology and Leisure Studies will offer a certificate in Sports Management through Continuing Education and Extension beginning Fall Quarter 1992. For information, call 625-1007.

Rec 5100 FOUNDATIONS OF RECREATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Investigation of the historical, sociological, and educational bases of the recreative use of leisure time in contemporary society. **Must be taken A-F.** (Prereq MEd, adult special, or grad student. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★○Sec 1, M, 6:30-8:30, CookeH 206, Schultz

Rec 5111 SPORT FACILITIES. 3 credits, \$Kin 5111, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Planning of areas and facilities for physical education and athletics, with emphasis on current trends and problems in the field. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Kin 5111. A joint Day/Extension class limited to a combined total of 10 Extension students)

Winter Qtr, ★○Sec 1, T, 4:15-6:30, CookeH 206, Anderson

Rec 5210 INTRODUCTION TO THERAPEUTIC RECREATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Relationship of recreation to special populations, milieu and interdisciplinary approaches in the delivery of services. **Must be taken A-F.** (Prereq 1520 or ¶5100, recreation major or Δ. Grad and MEd students only. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★○Sec 1, M, 4:15-6:15, CookeH 206

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Rec 5230 RECREATION AND PERSONS WITH DEVELOPMENTAL DISABILITIES. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Issues relating to leisure services for persons with mental retardation problems; approaches to programming in the institution and in the community. **Must be taken A-F.** (Prereq 5210, 5220 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Fall Qtr, ★○Sec 1, T, 4:15-7:30, CookeH 206, Schleien

Rec 5310 PROGRAMMING OUTDOOR EDUCATION. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Methods, materials, and settings appropriate for developing and conducting outdoor education and environmental interpretation programs; emphasis on development of practical skills. **Must be taken A-F.** (Prereq 5300 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★○Sec 1, Th, 4:15-7:30 (plus weekend field trip), CookeH 206, McAvoy

Rec 5350 WILDERNESS OUTDOOR RECREATION PROGRAMMING. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Exploration of leisure and educational resources of wilderness and management of wilderness-based outdoor recreation and outdoor education programs. **Must be taken A-F.** (Prereq 3150 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Winter Qtr, ★○Sec 1, Th, 4:30-7:30 (plus 1 weekend field trip arr), CookeH 206, McAvoy

Rec 5455 RECREATIONAL SPORTS. 3 credits, §PE 5255, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

In-depth analysis of the process and benefits of recreational sports programming and participation. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★○Sec 1, M, 4:15-6:30, CookeH 206, Anderson

Rec 5900 CONTEMPORARY ISSUES IN LEISURE SERVICES: GRANT WRITING AND FUNDRAISING IN LEISURE SERVICES. (12 cr max) 4 credits this offering, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Strategies in identifying, developing, and procuring financial assistance including proposal preparation for private foundations and governmental agencies. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 20 Extension students)

Winter Qtr, ★○Sec 1, M, 5:30-9, Arr, Schleien

Rec 5900 CONTEMPORARY ISSUES IN LEISURE SERVICES: PROJECT WILD ENVIRONMENTAL EDUCATION CURRICULUM. (12 cr max) 1 credit this offering, tuition* (includes \$18 course fee): Resident \$100.50; Non-resident \$257.25; Resident Graduate credit \$117; Non-resident Graduate credit \$216; Resident Graduate School credit \$189; Non-resident Graduate School credit \$360.

Project WILD is a supplementary, interdisciplinary K-12 curriculum which teaches environmental concepts through studying wildlife issues. Identifies and demonstrates a number of teaching strategies and specific curriculum activities that can be used in a variety of educational and leisure settings. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Spring Spec Term, Sec 2, Sa, 9 a.m.-4, Apr. 16, 1994, Wood Lake Nature Center, 735 Lake Shore Dr., Richfield, and T, 6-9, Apr. 19, 1994, Wood Lake Nature Center, 735 Lake Shore Dr., Richfield, McAvoy, Van Norman. *No late fee through Apr. 8*

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Religious Studies (ReIS)

(220 Johnston Hall: 624-8006)

College of Liberal Arts

Textbooks for most ReIS courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Ancient Near Eastern Studies; Hebrew; Anth 3131, Religion and Culture; Psy 3911, Psychology of Religion; The Compleat and Practical Scholar noncredit courses; and Philosophy)

V. Elving Anderson, Adjunct Professor

Teirab AshShareef, Assistant Professor of

Afro-American and African Studies

Patricia A. Darling, Lecturer

Stephen Feinstein, Professor of Classical and Near Eastern Studies

Susan K. Henderson, Lecturer

Indira Junghare, Professor of South Asian and

Middle Eastern Studies

William Malandra, Associate Professor of Classical and Near Eastern Studies and South Asian and Middle Eastern Studies

Daniel Reisman, Associate Professor of Classical and Near Eastern Studies

Thomas Robbins, Lecturer

Philip Sellow, Associate Professor of Classical and Near Eastern Studies

David Shupe, Lecturer

Susan M. Smith, Instructor

Robert B. Tapp, Professor of Humanities and Religious Studies

Lauren Tesdell, Adjunct Professor of History

B.A. Major Sequence

Major Requirements—

15 courses distributed as follows:

A. Area and historical studies (courses from at least 2 areas)

B. Literary and artistic perspectives on religions (1 course)

C. Sociocultural perspectives on religions (1 course)

D. Philosophical perspectives on religions (1 course)

E. Advanced methodology seminar, ReIS 5890.

Lists of courses approved for inclusion in groups A, B, C and D are available in the brochure, Religious Studies at the University of Minnesota.

Before admission to the program, you should consult the religious studies advisor, 220 Johnston Hall, for referral to faculty members in your area of interest. The degree program must have the adviser's approval.

Minor Requirements—Five courses in at least 3 of the fields.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Religious Studies. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

ReIS 1001 INTRODUCTION TO RELIGIOUS STUDIES. 4 credits, \$5001, tuition*: Resident \$280; Non-resident \$812.

Individual and social religious behavior; methodologies for studying it; emergence of modern religious studies. Theistic Western religions (Judaism, Christianity, Islam) and nontheistic Buddhism. (No prereq.)
Fall Qtr, Sec 1, T, 6:20-8:50, NichH 122, Malandra

ReIS 1031 INTRODUCTION TO THE RELIGIONS OF SOUTH ASIA. 4 credits, \$ReIS 3031, 5031, \$SALC 1504, 3031, 5031, tuition*: Resident \$280; Non-resident \$812. (IS)

Introduction to Hinduism, Buddhism, and Jainism. (No prereq. Meets concurrently with SALC 1504)

Winter Qtr, Sec 1, M, 6:20-8:50, FolH 104, Malandra

ReIS 1034 INTRODUCTION TO JUDAISM. 4 credits, \$3034, \$JwSt 1034, 3034, tuition*: Resident \$280; Non-resident \$812.

Concepts, movements, and institutions in the development of classical Judaism, as manifested in the literature and festivals of the Jewish people from Second Commonwealth times to present. (No prereq. Meets concurrently with 3034, JwSt 1034, 3034)

Winter Qtr, Sec 1, W, 6:20-8:50, FolH 218

ReIS 1036 THE RELIGION OF ISLAM. 4 credit, \$MELC 1536, tuition*: Resident \$280; Non-resident \$812.

The rise of Islam in historical context; the role of Muhammad, Koran traditions; fundamentals and observances of the faith; sectarian movements; the spread of Islam into Asia, Africa, and America; reformist movements and current trends. (No prereq. Meets concurrently with MELC 1536)

Winter Qtr, Sec 1, Th, 6:20-8:50, BlegH 205, Tesdell

ReIS 3034 INTRODUCTION TO JUDAISM. 4 credits, \$1034, \$JwSt 1034, 3034, tuition*: Resident \$294; Non-resident \$852.60. (IS)

See course description for ReIS 1034. (No prereq. Meets concurrently with 1034, JwSt 1034, 3034)

Winter Qtr, Sec 1, W, 6:20-8:50, FolH 218

* Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

ReIS 3035 CHRISTIAN RELIGIOUS TRADITIONS. 4 credits, §1035, §5035, tuition*: Resident \$294; Non-resident \$852.60.

Historical structures, themes, and persons examined in Christianity's transition from minor Jewish sect to martyrdom to dominant religion to modern pluralism. In modern period, focus on problematic situations of racism, nationalism, democracy, capitalism, imperialism, war, sexism, Marxism, secularization. (Prereq jr)

Winter Qtr, Sec 1, W, 6:20-8:50, FolH 148, Tapp

ReIS 3089 INTRODUCTION TO BIBLICAL ARCHAEOLOGY. 4 credits, §5089, §Clas 3089, §Clas 5089, tuition*: Resident \$294; Non-resident \$852.60.

Archaeological data relevant to the Jewish scriptures and the New Testament; major sites in the Holy Land and in other areas of the Mediterranean and the Near East. The evidence of pottery, inscriptions, manuscripts, and coins. Excavation methods. Archaeology as a tool for study of ancient religions. (No prereq. Meets concurrently with 5089, Clas 3089, 5089)

Spring Qtr, Sec 1, T, 6:20-8:50, FolH 138, Sellaw

ReIS 3115 MISHNAH AND MIDRASH IN TRANSLATION. 4 credits, §JwSt 3115, tuition*: Resident \$294; Non-resident \$852.60.

Rabbinic writings in their original contexts and as living texts for the present. Interpretations of the Bible by early rabbis that address moral, theological, and literary problems. Jewish laws as a mirror of human culture. Knowledge of Hebrew not required. (Prereq jr, sr, grad or #. Meets concurrently with JwSt 3115)

Spring Qtr, Sec 1, Th, 6:20-8:50, FolH 208

ReIS 3201 THE BIBLE: NARRATIVE TEXTS. 4 credits, §ANE 1001, 3001, tuition*: Resident \$294; Non-resident \$852.60.

Survey of literary and historical narrative texts from: Pentateuch, Joshua, Judges, Samuel, and Kings. Reading of extensive selections from Bible and secondary materials discussing literary background of the texts. (No prereq. Meets concurrently with ANE 1001, 3001)

Fall Qtr, Sec 1, T, 6:20-8:50, NichH 216, Reisman

ReIS 3213 THE QUR'AN AS LITERATURE. 4 credits, §Arab 3213, §MELC 3213, tuition*: Resident \$294; Non-resident \$852.60.

Texts and commentaries in translation. Knowledge of Arabic not required. (No prereq. Meets concurrently with Arab 3213, MELC 3213. Limited to 10)

Spring Qtr, ★Sec 1, M, 4:15-7, BlegH 330, AshShareef

ReIS 3251 THE MODERN STUDY OF THE OLD TESTAMENT. 4 credits, §ANE 3251, tuition*: Resident \$294; Non-resident \$852.60.

Methods employed in the study of the Old Testament, including textual criticism, the anthropological approach, form criticism, the sociological approach, the history of religion, and the uses of archaeology in interpreting the text. (No prereq. Meets concurrently with ANE 3251)

Spring Qtr, Sec 1, W, 6:20-8:50, FolH 50, Reisman

ReIS 3412 HINDUISM. 4 credits, §ReIS 5412, §SALC 3412, 5412, tuition*: Resident \$294; Non-resident \$852.60.

Development of Hinduism, focusing on sectarian trends, modern religious practices, myths and rituals, pilgrimage patterns and religious festivals, and the interrelationship of Indian social structure and Hinduism. (Prereq MELC 1504 or SALC 3411 or ReIS 1031 or #. Meets concurrently with ReIS 5412 and SALC 3412, 5412. Limited to 25)

Fall Qtr, ★Sec 1, W, 6:20-8:50, FolH 306, Junghare

ReIS 3413 BUDDHISM. 4 credits, §ReIS 5413, §SALC 3413, 5413, tuition*: Resident \$294; Non-resident \$852.60.

Historical account of the Buddhist religion in terms of its rise, development, various schools and common philosophical concept. Focuses on Indian Buddhism, compares it with Hinduism, and discusses its demise and revival on the Indian subcontinent. (No prereq. Meets concurrently with 5413 and SALC 3413, 5413. Limited to 25)

Spring Qtr, ★Sec 1, W, 6:20-8:50, FolH104, Junghare

ReIS 3414 COMPARATIVE RELIGIONS OF SOUTH ASIA. 4 credits, §5414, §SALC 3414, 5414, tuition*: Resident \$294; Non-resident \$852.60.

Compares and contrasts basic philosophical concepts, literatures, ideologies, and ritualistic practices of Hinduism, Buddhism, and Jainism with those of Islam and Sikhism. (No prereq. ReIS 3412 and ReIS 3414 recommended. Meets concurrently with 5414 and SALC 3414, 5414. Limited to 25)

Winter Qtr, ★Sec 1, W, 6:20-8:50, FolH 208, Junghare

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

RelS 3541 THE HOLOCAUST. 4 credits, §JwSt 3521, tuition*: Resident \$294; Non-resident \$852.60.

Nazi destruction of Jewish life in Europe, 1933-45. Historical, social background of European Jewish communities. Anti-Semitism and Nazism. Ghettos under Nazi rule; social and cultural organization, government. Nazi terror and destruction; Jewish resistance; historical consequences; moral and philosophical implications. (No prereq. Meets concurrently with JwSt 3521)

Winter Qtr, Sec 1, Th, 6:20-8:50, FolH 306,
Feinstein

RelS 3701 SCIENTIFIC STUDY OF RELIGION. 4 credits, §5701, tuition*: Resident \$294; Non-resident \$852.60.

Examination of theoretical and empirical issues in studying religious ideologies, institutions, and behaviors with techniques of social sciences. (Prereq jr or sr or grad or #)

Spring Qtr, Sec 1, Th, 6:20-8:50, FolH 116,
Robbins

RelS 3960 AMERICAN REVIVALISM IN THE LATE 20TH CENTURY: THE STRUGGLE TO KEEP AND REFORM THE TRADITIONS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Following the second Vatican Council, American Catholicism came into view as significantly influenced by evangelical and pentecostal Protestants. An unexpected evangelical renaissance, open to Catholic alliances, appeared during the same years, as did a revival of Hasidism in the American Jewish community. This course will explore these developments, their relationships to one another, and their impact on religion in the Americas. (No prereq)

Fall Qtr, Sec 1, M, 6:20-8:50, FordH 70, Smith

RelS 3960 AMERICAN INDIAN RELIGIONS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Explores the various tribal traditions that comprise Native American religions of North America. After surveying historical backgrounds and major cultural traditions, the course examines religious responses of Native Americans to emerging European pressures. Contemporary native American traditions will be considered through literature, philosophy, art, ceremony, song, healing, arts, film, and discussions with guest speakers. (No prereq)

Fall Qtr, Sec 2, W, 6:20-8:50, FordH 60, Darling

RelS 3960 ORDER AND CHAOS. 4 credits, §CSCL 3910, tuition*: Resident \$294; Non-resident \$852.60.

The victory of order over chaos is one of the oldest mythic themes known. In modern times this contest reappears as disagreement over the value given to systemic thought and reason (whether religious doctrine or scientific theory and explanation) versus the value given to all the complex aspects of existence which do not conform to traditional perspectives or theoretical explanations. Social science and the academic study of religion are primarily based on 19th-century approaches to describing and explaining human behavior—approaches which generally eliminate “chaotic” human activity from consideration. This course reviews 20th-century ideas concerning the human need for understanding and the importance of theory and explanation. It also examines several 20th-century intellectual attempts—within natural science (“chaos theory”), social science, psychology, and literature—which seek more thoroughly to acknowledge the reality and importance of chaos. Specifically examined is how understanding of human experience changes when both theoretical perspectives and that which calls theoretical perspectives into question are taken into account. (No prereq. Meets concurrently with CSCL 3910 sec 4. Limited to a combined total of 40)

Winter Qtr, ★Sec 3, M, 6:20-8:50, FolH 116,
Shupe

RelS 3960 U.S. WOMEN'S RECONCEPTUALIZATION OF CHRISTIAN SPIRITUALITY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Examines the writings of contemporary women, including those of Rosemary Radford Ruether, Elisabeth Schüssler Fiorenza, Sally McFaugé, Letty Russell, Mary Daly, Carol Christ, and Judith Plaskow. Particular attention is given to their reworking of both traditional theological and popular understandings of the nature of the divine, sin, and salvation. Written assignments provide students opportunity to explore an author or issue in more depth or to do exploratory fieldwork of their own. (No prereq)

Spring Qtr, Sec 4, M, 6:20-8:50, FordH 40,
Henderson

(See also CSch 0232, Redefining Spirituality: Women and American Religion)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

ReIS 5089 INTRODUCTION TO BIBLICAL ARCHAEOLOGY. 4 credits, §3089, §Clas 3089, §Clas 5089, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for ReIS 3089. Requires additional work for graduate credit. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3089, Clas 3089, 5089)

Spring Qtr, Sec 1, T, 6:20-8:50, FolH 138, Sellw

ReIS 5412 HINDUISM. 4 credits, §ReIS 3412, §SoAS 3412, 5412, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for ReIS 3412. (Prereq MELC 1504 or SALC 3411 or ReIS 1031 or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with ReIS 3412 and SALC 3412, 5412. Limited to 10)

Fall Qtr, ★Sec 1, W, 6:20-8:50, FolH 306,
Junghare

ReIS 5413 BUDDHISM. 4 credits, §ReIS 3413, §SALC 3413, 5413, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See course description for ReIS 3413. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with ReIS 3413 and SALC 3413, 5413. Limited to 10)

Spring Qtr, ★Sec 1, W, 6:20-8:50, FolH 104,
Junghare

ReIS 5414 COMPARATIVE RELIGIONS OF SOUTH ASIA. 4 credits, §3414, §SALC 3414, 5414, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See description for ReIS 3414. (No prereq. SALC 3412 and 3413 recommended. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3414 and SALC 3414, 5414. Limited to 140)

Winter Qtr, ★Sec 1, W, 6:20-8:50, FolH 208,
Junghare

ReIS 5890 SEMINAR IN RELIGIOUS STUDIES. 5 undergraduate credits each quarter, tuition*: Resident \$367.50; Non-resident \$1065.75. 3 graduate credits each quarter, tuition*: Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Conceptual and methodological issues in contemporary religious studies. (Prereq sr religious studies major or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ○Sec 1, M, 4:30-7:15, FordH 50, Tapp

Research Explorations

(See page 428)

Rhetoric (Rhet)

(202 Haecker Hall: 624-3445)

College of Agriculture

(Technical Communication Program)

Textbooks for Rhet courses on the Minneapolis campus and at neighborhood centers are available at the Minnesota Book Center in Williamson Hall (625-6000); books for courses on the St. Paul campus are available at Books Underground on the St. Paul campus (624-9200).

(See also Learning and Academic Skills; General College; English; Composition and Communication; The Compleat and Practical Scholar noncredit courses; and other study helps, page 456. For a free course on how to use University libraries, see page 448)

Sandra J. Becker, Associate Professor
J. Michael Bennett, Associate Professor
James E. Connolly, Professor
Richard W. Ferguson, Associate Professor
Warren Gore, Associate Professor of Rhetoric
Earl E. McDowell, Professor
L. David Schuelke, Professor
John M. Sperbeck, Associate Professor, College of Agriculture

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in Rhetoric. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Rhet 1151 WRITING IN YOUR MAJOR. 4 credits, tuition*: Resident \$280; Non-resident \$812. Students investigate and write about subjects related to their majors. Emphasis on gathering, evaluating, synthesizing, and summarizing information; adapting it for various audiences. The criterion of appropriateness: good writing meets the expectation of readers and the conventions of a particular form. Assignments include literature review, abstract, fact sheet, instructions, and feature article. (Prereq 1104, completion of freshman communication requirements, sophomore. Limited to 22)

Winter Qtr, ★Sec 1, M, 6:20-8:50, ClaOff 135, StP Campus

Spring Qtr, ★Sec 2, M, 6:20-8:50, ClaOff 135, StP Campus

Rhet 1222 PUBLIC SPEAKING. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Practical course in fundamentals of speechmaking. Emphasis on researching and organizing a speech and communicating with an audience. (Prereq freshman communication requirement. Limited to 20)

Fall Qtr, ★Sec 1, T, 6:20-9:40, HckrH 222, StP Campus, Gore

Fall Qtr, ★Sec 2, W, 6:20-9:40, CentLib 4, StP Campus, Bennett

Winter Qtr, ★Sec 3, T, 6:20-9:40, HckrH 222, StP Campus, Gore

Winter Qtr, ★Sec 4, W, 6:20-9:40, CentLib 6, StP Campus

Spring Qtr, ★Sec 5, T, 6:20-9:40, HckrH 222, StP Campus, Gore

Spring Qtr, ★Sec 6, W, 6:20-9:40, CentLib 4, StP Campus, Bennett

(See also Speech-Communication; and PSch 0851, Creating Effective Presentations: The Performer's Perspective)

Rhet 1441 COLLEGE READING AND LEARNING SKILLS. 4 credits, \$5160, tuition* (includes \$3 course fee): Resident \$283; Non-resident \$815. (IS)

Lecture, and individual and small group practice in developing speed, comprehension, retention, and flexibility in reading college assignments; clarity and precision in written expression; accuracy and effectiveness in listening; control of communication-related anxiety, including test taking; vocabulary power. Not a basic course. A suggested follow-up for LASK 1001, Becoming a Master Student. (No prereq. Limited to 40)

Winter Qtr, ★Sec 1, W, 6:20-9:40, FordH 120, Bennett

(See also Psch 0640, Rapid Reading and Comprehension)

Rhet 3254 ADVANCED PUBLIC SPEAKING. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Training for specific speech situations most likely to be encountered professionally. Emphasis on analysis, design, preparation, and delivery of presentations to provide greater flexibility within a variety of speech environments. (Prereq 1222. Limited to 18)

Fall Qtr, ★Sec 1, Th, 6:20-9:40, HckrH 222, StP Campus, Connolly

Rhet 3266 COMMUNICATION, DISCUSSION IN SMALL GROUP DECISION MAKING. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Role of communication techniques in the small group decision making process. Emphasis on problem-solving discussion requiring some kind of formal outcome. (Prereq 1222 or #. Limited to 20)

Fall Qtr, ★Sec 1, M, 6:20-9:40, HckrH 222, StP Campus, Schuelke

Rhet 3562 WRITING IN YOUR PROFESSION. 4 credits, tuition*: Resident \$330; Non-resident \$957. (IS)

Projects in writing professional reports. Analyses of audience and situation; writing effectively to meet the needs of particular readers. Assignments include writing instructions, feasibility reports, proposals, memorandums, letters of appreciation, and resumés. (Prereq freshman communication requirement, 1151, junior status. Limited to 22)

Fall Qtr, ★Sec 1, T, 6:20-8:50, HckrH 312, StP Campus, Ferguson

Winter Qtr, ★Sec 2, T, 6:20-8:50, HckrH 312, StP Campus, Becker

Spring Qtr, ★Sec 3, T, 6:20-8:50, HckrH 312, StP Campus, Becker

Spring Qtr, ★Sec 4, Th, 6:20-8:50, HckrH 302, StP Campus

Rhet 3565 WRITING FOR PUBLICATION. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Writing and preparing manuscripts for publication; adaptation to specialized and general reader; professional, trade, and general publications; information sources and topic selection; marketing techniques. This course has computer-assisted instruction and requires a microcomputer lab card. (Prereq 3562, #. Limited to 20)

Winter Qtr, ★Sec 1, T, 5:30-8, ClaOff 135, StP Campus, Spertbek

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Rhet 5257 SCIENTIFIC AND TECHNICAL PRESENTATIONS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Presentations for specific situations related to technical or scientific topics. Audience analysis and adaptation, techniques of support and visualization, organization for clarity and accuracy, and techniques of interpreting and answering questions. Students will make and evaluate technical and scientific presentations. Emphasis on seminar reports and professional conference papers. (Prereq 1222, 3562 or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 15)

Fall Qtr, ★Sec 1, T, 6:20-9:40, HckrH 209, StP Campus, Connolly

Rhet 5258 INTERVIEWING: DYNAMICS OF FACE-TO-FACE COMMUNICATION. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Designed to improve intrapersonal and interpersonal skills in interviewing situations. Students learn to understand and use appraisal, reprimand, complaint, persuasion, problem solving, and counseling interview techniques and participate in a research interview project. Equal emphasis on the interviewer and interviewee roles. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Fall Qtr, ★Sec 1, W, 6:20-9:40, HckrH 222, StP Campus, McDowell

Winter Qtr, ★Sec 2, W, 6:20-9:40, HckrH 222, StP Campus, McDowell

Spring Qtr, ★Sec 3, W, 6:20-9:40, HckrH 222, StP Campus, McDowell

(See also Spch 5422, Interviewing and Communication)

Rhet 5500 RESEARCH IN COMMUNICATION STRATEGIES. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Fundamental terminology of descriptive and experimental research, communication research, questionnaire techniques, interviewing techniques, survey and experimental designs, the steps in organizing and conducting field and empirical research, and basic statistical and computer techniques. Emphasis on application of various research methods to particular

communication strategies or settings. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Spring Qtr, ★Sec 1, M, 5-8:20, HckrH 222, StP Campus, McDowell

Rhet 5572 PROCEDURES AND POLICIES MANUAL. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Problem analysis, process management, gathering information, writing procedures, verification, constructing the finished manual. (Prereq scientific and technical communication major or minor, freshman communication, 3562 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 7 Extension students)

Spring Qtr, ★Sec 1, W, 4:05-6:25, HckrH 312, StP Campus, Ferguson

Rhet 5600 TRANSFER OF TECHNOLOGY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Methods of transferring scientific and technical knowledge and practice. Review of research in diffusion and transfer methods at different technical levels. Tools, methodologies, and assessment procedures for managing a program. Assessment and design plan. (Prereq work experience in scientific communication or #. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, Th, 6:20-9:40, HckrH 312, StP Campus, Schuelke

Russian and East European Studies

(See Area Studies Programs, page 75; and the Institute of Languages and Literatures, page 237)

Study in Russia—Students interested in intermediate and advanced Russian language and culture can earn credit during spring quarter in St. Petersburg. For information, call the Global Campus at 625-3379.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Scandinavian Languages and Literature

(200 Folwell Hall: 625-9887)

College of Liberal Arts

Textbooks for most Scan courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Ole Gram, Teaching Assistant
William Mishler, Associate Professor
Tuulikki Sinks, Teaching Specialist
Göran Stockenström, Professor

Read about language laboratories on page 51.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Scandinavian Languages. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Danish (Dan)

Dan 1101-1102-1103 BEGINNING DANISH. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015. (IS 1101)

Intended for students who have little or no previous knowledge of Danish. Stress fundamentals of grammar, correct pronunciation, reading, practice in conversation and simple composition. (No prereq for 1101; 1101 or # for 1102; 1102 or # for 1103. A joint Day/Extension class limited to 25 Extension students)

Fall Qtr, 1101, ★○Sec 1, MTTh, 5:30-7:30, FolH 334

Winter Qtr, 1102, ★○Sec 1, MWTh, 5:30-7:30, FolH 334

Spring Qtr, 1103, ★○Sec 1, MWTh, 5:30-7:30, FolH 334

Dan 1104-1105-1106 INTERMEDIATE DANISH. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015.

Continued development of reading, writing, and speaking skills. (Prereq 1103 or equivalent for 1104; 1104 or equivalent for 1105; 1105 or equivalent for 1106. A joint Day/Extension class limited to 25 Extension students)

Fall Qtr, 1104, ★○Sec 1, MWF, 4-6, FolH 214

Winter Qtr, 1105, ★○Sec 1, MWF, 4-6, FolH 214

Spring Qtr, 1106, ★○Sec 1, MWF, 4-6, FolH 214

Finnish (Fin)

Fin 1101-1102-1103 BEGINNING FINNISH. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015. (IS 1101)

Intended for students who have little or no previous knowledge of Finnish. Stress fundamentals of grammar, correct pronunciation, reading, practice in conversation, and simple composition. (No prereq 1103 for 1101; 1101 or # for 1102; 1102 or # for 1103)

Fall Qtr, 1101, Sec 1, W, 6:10-10:05, FolH 340, Sinks

Winter Qtr, 1102, Sec 1, W, 6:10-10:05, FolH 138, Sinks

Spring Qtr, 1103, Sec 1, W, 6:10-10:05, KoltH S134, Sinks

Norwegian (Nor)

Nor 1101-1102-1103 BEGINNING NORWEGIAN. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015. (IS)

This sequence, intended for students who have little or no previous knowledge of Norwegian, stresses fundamentals of grammar, correct pronunciation, reading, practice in conversation, and simple composition. (No prereq for 1101; 1101 or # for 1102; 1102 or # for 1103. Limited to 50)

Fall Qtr, 1101, ★Sec 1, T, 6:10-10:05, FolH 340

Winter Qtr, 1102, ★Sec 1, T, 6:10-10:05, FolH 214 (Limit 25)

Spring Qtr, 1103, ★Sec 1, T, 6:10-10:05, FolH 50 (Limit 20)

Nor 1104-1105-1106 INTERMEDIATE NORWEGIAN. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015.

Continued development of reading, writing, and speaking skills (Prereq 1103 or equivalent for 1104; 1104 or equivalent for 1105; 1105 or equivalent for 1106. Limited to 20)

Fall Qtr, 1104, ★Sec 1, W, 6:10-10:05, FolH 234

Winter Qtr, 1105, ★Sec 1, W, 6:10-10:05, FolH 50

Spring Qtr, 1106, ★Sec 1, W, 6:10-10:05, KoltH S135

Scandinavian (Scan)

Scan 3505 SCANDINAVIAN FICTION FROM 1890 TO PRESENT. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Scandinavian fiction from 1890 to present. (No prereq)

Spring Qtr, Sec 1, M, 6:20-8:50, FolH 50, Mishler

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Scan 3602 THE SCANDINAVIAN FAIRY TALE AS LITERATURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Examined in context of German romanticism. Emphasis on H.C. Andersen and 20th-century authors who write in his tradition. (No prereq)

Winter Qtr, Sec 1, M, 6:20-8:50, SmithH 111, Mishler

Scan 3605 THE SCANDINAVIAN AND FINNISH SHORT STORY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Stories by important 19th and 20th century-authors. (No prereq)

Fall Qtr, Sec 1, M, 6:20-8:50, FolH 116, Mishler

Swedish (Swed)

Swed 1101-1102-1103 BEGINNING SWEDISH. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015. (IS)

This sequence, intended for students who have little or no previous knowledge of Swedish, stresses fundamentals of grammar, correct pronunciation, reading, practice in conversation, and simple composition. (No prereq for 1101; 1101 or # for 1102; 1102 or # for 1103)

Fall Qtr, 1101, Sec 1, T, 6:10-10:05, FolH 50, Stockenström

Winter Qtr, 1102, Sec 1, T, 6:10-10:05, FolH 50, Stockenström

Spring Qtr, 1103, Sec 1, T, 6:10-10:05, FolH 426, Stockenström

Swed 1104-1105-1106 INTERMEDIATE SWEDISH. 5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015. (IS)

Continued development of reading, writing, and speaking skills. (Prereq 1103 or equivalent for 1104; 1104 or equivalent for 1105; 1105 or equivalent for 1106)

Fall Qtr, 1104, Sec 1, Th, 6:10-10:05, FolH 50, Stockenström

Winter Qtr, 1105, Sec 1, Th, 6:10-10:05, FolH 50, Stockenström

Spring Qtr, 1106, Sec 1, Th, 6:10-10:05, FolH 50, Stockenström

Secondary Education (SeEd)

(125 Peik Hall: 625-6372)

College of Education

(Department of Curriculum and Instruction)

Textbooks for most SeEd courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

Patricia G. Avery, Associate Professor

Richard Beach, Professor

L. JoAnne Buggey, Lecturer

John J. Cogan, Professor

Fred N. Finley, Associate Professor

Michael F. Graves, Professor

Patricia A. Heller, Associate Professor

Peggy A. House, Professor

Helen L. Jorstad, Associate Professor

R. Michael Paige, Associate Professor

Diane J. Tedick, Assistant Professor

Constance L. Walker, Associate Professor

Master's Degree—A Master of Education degree with a focus on **Second Languages and Cultures** offered through the Department of Curriculum and Instruction is available. This degree allows students to tailor their course work and school- and professional-based experiences to their individual needs.

For information on the degree program, telephone (612) 625-6501.

Master's Degree—A Master of Education degree with a focus on **Leadership** is available through the Curriculum and Instruction department and through the Educational Policy and Administration department. This degree is designed to increase a teacher's ability to take on the expanded roles and responsibilities of educators in Minnesota and across the country. Students will be admitted into the program once a year, each fall quarter. Classes will be held at an off-campus site. Degree completion is possible within two to three years. One requirement for admission is that applicants must have at least two years of classroom teaching experience.

For further information on degree programs, telephone (612) 626-7196.

These courses are subject to frequent changes in time and rooms. Check for correct day, time, and room in a day school class schedule.

Enrollments in limited classes in this department are strictly enforced. Neither the department nor the course instructor will give written permission for registration in these classes once the limit is reached and the class closes. However, you may check for openings in day school.

Study Abroad for Teachers of Spanish—a 5-week summer study abroad program offered by the Global Campus. For more information, call 625-3379.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

SeEd 5122 TEACHING CULTURE: THEORY AND APPLICATION. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Analysis of the concept; related factors and materials for use in the classroom; culture shock; empathy; culture conflict, awareness, learning. **Must be taken A-F.** (Prereq postbaccalaureate or graduate student. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 10 Extension students)

Winter Qtr, ★●Sec 1, W, 3:35-7, PeikH 225, Walker

SeEd 5150 ADVANCED METHODS OF TEACHING THE SOCIAL STUDIES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Advanced methods for social studies teachers; prerequisite to other graduate-level courses in social studies education. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★●Sec 1, W, 5-7, BuH 123, Avery

SeEd 5152 TECHNIQUES OF INSTRUCTION IN SOCIAL STUDIES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Analysis of teaching strategies and contemporary curriculum materials in the social studies; techniques of instruction useful in inquiry; strategies of analysis; classroom behavior and evaluation; required of M.A., M.Ed., and Ph.D. candidates. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★●Sec 1, W, 5-8, PeikH 325

SeEd 5164 GLOBAL EDUCATION: CONTENT AND PROCESS. 3 credits, §Elem 5164, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Designed to help classroom teachers and administrators assess current methods and materials and select appropriate evaluation instruments by examination of existing content and methods in global education.

Must be taken A-F. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Elem 5164. A joint Day/Extension class limited to 6 Extension students)

Spring Qtr, ★●Sec 1, W, 4:30-7, ChDev 218, Cogan

SeEd 5175 SECONDARY REMEDIAL READING INSTRUCTION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Principles and techniques for developing and conducting programs for secondary students seriously deficient in reading skills. **Must be taken A-F.** (Prereq 5344 or Elem 5331 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★●Sec 1, T, 4:30-7, PeikH 46, Graves

SeEd 5176 CLASSROOM RESEARCH IN ENGLISH EDUCATION AND READING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Review and analysis of current studies; design and analyses for school-based research. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★●Sec 1, T, 4:30-7, ChDev 218, Graves

SeEd 5185 SCHOOL AND PROFESSIONAL BASED EXPERIENCES IN SECOND LANGUAGES AND CULTURES. 1-12 credits (max 12 credits), tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

(Prereq for MEd students only. Qualified students may register for graduate credit at the University of Minnesota. Limited to 6)

Fall Qtr, ★Sec 1, Arr, Jorstad

Fall Qtr, ★Sec 2, Arr, Lange

Fall Qtr, ★Sec 3, Arr, Paige

Fall Qtr, ★Sec 4, Arr, Tedick

Fall Qtr, ★Sec 5, Arr, Walker

Winter Qtr, ★Sec 6, Arr, Jorstad

Winter Qtr, ★Sec 7, Arr, Lange

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Winter Qtr, ★Sec 8, Arr, Paige
 Winter Qtr, ★Sec 9, Arr, Tedick
 Winter Qtr, ★Sec 10, Arr, Walker
 Spring Qtr, ★Sec 11, Arr, Jorstad
 Spring Qtr, ★Sec 12, Arr, Lange
 Spring Qtr, ★Sec 13, Arr, Paige
 Spring Qtr, ★Sec 14, Arr, Tedick
 Spring Qtr, ★Sec 15, Arr, Walker

SeEd 5189 PLANNING AND ASSESSING SECOND LANGUAGE CURRICULUM. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Development of competencies in curriculum and materials construction; application to lessons, units, modules, courses, levels of instruction in ongoing programs of second language acquisition in schools. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★Sec 1, M, 3:35-7, PeikH 225, Tedick

SeEd 5218 ASSESSMENT OF LEARNERS WITH LIMITED ENGLISH PROFICIENCY. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Social, political, and educational context. Evaluation vs. research and implications for bilingual schooling, curriculum development, and materials section; existing methods for assessment of language proficiency and academic achievement. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★Sec 1, T, 3:35-7, PeikH 27, Walker

SeEd 5219 TEACHING READING TO SECOND LANGUAGE LEARNERS. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Reading process in second language; relationship between first and second languages and implications for reading; comprehension development; skill building; assessing second language reading; materials and resources for different languages and levels. (Interactive television offering.) **Must be taken A-F.**

(No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★Sec 1, M, 3:35-7, PeikH 155, Tedick

SeEd 5225 THE MULTICULTURAL GENDER-FAIR CURRICULUM. 4 credits, §Elem 5225 tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Planning for development and implementation of a multicultural and gender-fair perspective in elementary and secondary classrooms. Developing individual teacher goals, exploring professional issues, and acquiring resources and teaching strategies for successfully exploring new perspectives. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Elem 5225. A joint Day/Extension class limited to 6 Extension Students)

Spring Qtr, ★Sec 1, W, 3:35-8, PeikH 315,

Tedick, Avery

SeEd 5291 THEMATIC INSTRUCTION FOR MIDDLE SCHOOLS. 2 credits, §Educ 5191, §AdEd 5191, §Elem 5191, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Logical and contextual relationships among mathematics, science, and social studies as taught in middle schools. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with Elem 5191. A joint Day/Extension class limited to 4 Extension students)

Fall Qtr, ★Sec 1, M, 4:30-7, PeikH 325, Buggiey

SeEd 5320 LITERATURE FOR ADOLESCENTS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Reading and analysis of fiction and nonfiction; methods for critically assessing quality and appeal; appropriate for secondary English and social studies teachers and librarians. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★Sec 1, Sa, 9 a.m.-12:30, PeikH 48, Beach

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

SeEd 5321 TEACHING LITERATURE IN SECONDARY SCHOOLS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Current theory and methods of instruction; research and response to literature and reading; adolescent literature; growth assessment; curriculum design and evaluation. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★○Sec 1, Th, 4:30-7, PeikH 48, Beach

SeEd 5326 TEACHING FILM AND TELEVISION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Current theory and methods of teaching critical response to film and television; techniques, genres, history, economics; integration and use of short film and Super-8 filmmaking with English and social studies teaching in the classroom. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★○Sec 1, Th, 4:30-7, PeikH 28, Beach

SeEd 5344 TEACHING READING IN CONTENT AREAS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Methods of accommodating student abilities and facilitating reading in regular content classes. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★○Sec 1, T, 4:30-7, PeikH 46, Graves

SeEd 5351 DIRECTED STUDY. Cr arr (max 6 credits), tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Individual or group work on curricular, instructional, or evaluation problems. (Prereq educ or grad student, #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 6)

Fall Qtr, ★Sec 1, Arr, Jorstad

Fall Qtr, ★Sec 2, Arr, Lange

Fall Qtr, ★Sec 3, Arr, Paige

Fall Qtr, ★Sec 4, Arr, Tedick

Fall Qtr, ★Sec 5, Arr, Walker

Winter Qtr, ★Sec 6, Arr, Jorstad

Winter Qtr, ★Sec 7, Arr, Lange

Winter Qtr, ★Sec 8, Arr, Paige

Winter Qtr, ★Sec 9, Arr, Tedick

Winter Qtr, ★Sec 10, Arr, Walker

Spring Qtr, ★Sec 11, Arr, Jorstad

Spring Qtr, ★Sec 12, Arr, Lange

Spring Qtr, ★Sec 13, Arr, Paige

Spring Qtr, ★Sec 14, Arr, Tedick

Spring Qtr, ★Sec 15, Arr, Walker

SeEd 5385 PLANNING AND ASSESSING SECOND LANGUAGE INSTRUCTION. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Methods of teaching language as communication in oral and written modes; planning student interaction; classroom organization for learning and acquisition. Students plan and teach example lessons for analysis. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★○Sec 1, T, 3:35-7, PeikH 225, Tedick

SeEd 5397 STUDIES IN SCIENCE EDUCATION. 3 credits, \$8887, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Improvement of science teaching through application of research findings. **Must be taken A-F.** (Prereq M.Ed. student or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Winter Qtr, ★○Sec 1, W, 4:30-7, PeikH 365, Heller

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

SeEd 5398 SCIENCE EDUCATION ASSESSMENT. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Strategies for specifying science education outcomes and techniques for assessing them. **Must be taken A-F.** (Prereq science education graduate or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Fall Qtr, ★●Sec 1, W, 4:30-7, PeikH 365

SeEd 5706 FOUNDATIONS OF SCIENCE EDUCATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Analysis of present practices in light of the historical and philosophical foundations of science education. **Must be taken A-F.** (Prereq admission to M.A., M.Ed., or Ph.D. in education. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 12 Extension students)

Spring Qtr, ★●Sec 1, W, 4:30-7, PeikH 365,
Finley

Day School Classes—In addition to the Extension Classes listed above, day school classes are sometimes offered to educators during late afternoon, early evening, and weekend hours. For registration information about day school College of Education courses, see page 148 or call 625-6501.

Sign Language, American

See Educational Psychology, page 156.

Social and Behavioral Sciences

(See General College)

Social and Administrative Pharmacy (SAPh)

(7-115 Health Sciences Unit F: 624-2112)

College of Pharmacy

Textbooks for most SAPh courses are available at the Health Sciences Bookstore (625-8600).

Thomas M. McKennell, Assistant Professor and
Director of Pharmacy Continuing Education

SAPh 5007 BIOLOGY OF AGING. 2 credits, §Phar 5007, §SAHP 5007, §HSU 5031, tuition*: Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Biological theories of aging are reviewed; biological changes associated with aging in organ and sensory systems are studied. Other topics examined are the nutritional needs of the elderly, and their use of medications. Physical changes due to normal aging are contrasted with those having a pathological base. *Students who wish to take this course for undergraduate credit should register for either Phar 5007 or HSU 5031.* For information about this course, call Professor McKennell at 624-2442. (No prereq. Meets concurrently with HSU 5031 and Phar 5007. Students must register in SAPh 5007 for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ●Sec 1, Th, 4:40-6:25, MoosT 5125,

McKennell

Social and Philosophical Foundations of Education

See Educational Policy and Administration, page 149.

Social Work (SW)

(400 Ford Hall: 624-5888)

College of Human Ecology

Textbooks for most SW courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Sociology; General College; Public Health; Education; Health Science Units; and Social, Administrative, and Hospital Pharmacy)

Karen Belling, Lecturer

Rondell S. Berkeland, Director of Occupational
Therapy

Joan Bilinkoff, Lecturer

Irl Carter, Associate Professor

Martha Erickson, Lecturer

Anne Gearity, Lecturer

Jane Gilgun, Associate Professor

D. Michael Graham, Assistant Clinical Professor
and Director of School of Social Work

Continuing Education and Extension Program

C. David Hollister, Professor

Helen Kivnick, Associate Professor

Dorion Macek, Lecturer

Megan Morrissey, Coordinator and Instructor of
Social Work

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Jean K. Quam, Director and Professor
Susan Schultz, Lecturer
Esther Wattenberg, Professor
Oliver Williams, Assistant Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Social Work. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

NOTE: See the new **Weekend Master of Social Work (M.S.W.) Program** described beginning page 329, and the new **Child Abuse Prevention Studies Program** described beginning page 331.

International Internships and Study Abroad—Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

The School of Social Work does not offer a bachelor's degree in social work. For information on the Master of Social Work or the Ph.D. in social work, contact the school at 624-5888.

SW 1001 INTRODUCTION TO SOCIAL WELFARE AND COMMUNITY SERVICES. 5 credits, tuition*: Resident \$350; Non-resident \$1015. (IS)

Fields of Community-based social services, representative of societal responses to needs. Characteristics of such services reviewed historically, dynamically, and comparatively. (No prereq)

Fall Qtr, Sec 1, M, 6-9:30, FordH 175

Winter Qtr, Sec 2, T, 6-9:30, FordH 349, Hollister

Spring Qtr, Sec 3, Th, 6-9:30, FordH 175

SW 3201 INTERVENTIONS WITH INDIVIDUALS AND GROUPS. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Application of social work skills and values to work with individuals and small groups using an ecological framework. (No prereq. Limited to 50)

Winter Qtr, ★Sec 1, W, 6-9:30, FordH 160

Spring Qtr, ★Sec 2, M, 6-9:30, FordH 170

SW 3202 INTERVENTIONS IN COMMUNITY AND SOCIAL POLICY. 4 credits, tuition*: Resident \$330; Non-resident \$957.

Application of social work skills and values to community organization, social action, and social problems, using an ecological framework. (No prereq. Limited to 50)

Winter Qtr, ★Sec 1, M, 6-9:30, FordH 160

Spring Qtr, ★Sec 2, T, 6-9:30, FordH 150

SW 5010 SEMINAR: SPECIAL TOPICS—CLINICAL WORK WITH CHILDREN. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

The child's inner psychological experience and needs are examined through exploration of child development theory. Social work practice and clinical interventions with children are considered through discussion of case material and application of theory. (Prereq 8402, 69 cr MSW student, or social work professional. Qualified students may register for graduate credit at the University of Minnesota. Limited to 25)

Spring Qtr, ★Sec 1, M, 4:15-7, FordH 175,

Gearity, Schultz

SW 5010 SEMINAR: SPECIAL TOPICS—SOCIAL WORK PRACTICE WITH THE ELDERLY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Clinical practice issues in working with older clients individually, with their families, and in groups. Attention will be given to the differences between work with the well elderly and with the frail elderly. (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 2, W, 5-8:30, FordH 175

SW 5010 SEMINAR: SPECIAL TOPICS—SOCIAL WORK IN THE SCHOOLS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

A course designed to prepare students to apply social work methods and skills in a school setting. Emphasis will be placed on developing clinical skills, consultation, advocacy, and use of community resources as a school social worker. (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 3, Th, 4:15-7, FordH 60

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

SW 5010 SEMINAR: SPECIAL TOPICS—SOCIAL WORK PRACTICE WITH THE CHRONICALLY MENTALLY ILL. 3 credits, §SW 8422, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Provides specialized training and a conceptual framework for understanding chronic illness as an individual and a social problem. De-institutionalization and community-based care are examined in depth. (Prereq 8402, or 69 or MSW student. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Spring Qtr, ★Sec 4, M, 6-9, FordH 50

SW 5010 SEMINAR: SPECIAL TOPICS—SOCIO-CULTURAL PERSPECTIVES ON SOCIAL WORK WITH FAMILIES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Overview of methods for helping families to deal with stress and family problems in a variety of service settings. Seminar format, with student-led discussions and guest speakers. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Spring Qtr, ★Sec 5, Th, 4:15-7, FordH 130

SW 5013 INTERDISCIPLINARY TEAM TRAINING IN HEALTH SERVICES DELIVERY. 3 credits, §PubH 5003, 5013, §HSU 5001, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Interdisciplinary team development with application to public health, human service projects, didactic content, experiential methods, activities to develop attitudes, skills essential to effective team goal setting, decision making, problem solving, and task accomplishment. (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with PubH 5013, HSU 5001. A joint Day/Extension class limited to a combined total of 12 Extension students from health and helping professions)

Spring Qtr, ★Sec 1, W, 5:45-8:45, Mayo D326, Berkland

SW 5024 MULTIDISCIPLINARY PERSPECTIVES OF AGING. 4 credits, §AdEd 5440, §Educ 5440, §CPsy 5305, §HSU 5009, §Phar 5009, §SAHP 5009, §PA 5414, §PubH 5737, §Soc 5960, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

A multidisciplinary introduction to aging and the aging process. Topics include: sociological, biological, and psychological aspects of aging; theories of aging; death and bereavement; issues and problems of older adults in America; human services and their delivery systems such as health, nutrition, long-term care, and education; public policy and legislation; environment and housing, retirement. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with AdEd 5440, CPsy 5305, HSU 5009, PA 5414, PubH 5737, Phar 5009, Soc 5960. A joint Day/Extension class)

Fall Qtr, ★Sec 1, MW, 4:40-6:25, MoosT 2-690, Quam, AUCA Faculty (Limited to a combined total of 37 Extension students)

Spring Qtr, Sec 2, MW, 4:40-6:25, MoosT 2-690, Quam, AUCA Faculty

SW 5111 CONTEMPORARY POLICY AND PROGRAMS IN SOCIAL WELFARE. 4 undergraduate credits, tuition*: Resident \$330; Non-resident \$957. 3 graduate credits, tuition*: Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

A framework for analysis of concepts and principles in social policy for social welfare programs and services. (Prereq grad standing or 12 cr in social science. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, T, 7-10, FordH 175

SW 5211 ADVANCED THEORIES OF HUMAN GROWTH AND CHANGE. 4 undergraduate credits, tuition*: Resident \$330; Non-resident \$957. 3 graduate credits, tuition*: Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Socio-psycho-biological factors associated with individual and group development as applied to social work practice. (Prereq grad standing or 12 cr in social sciences. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, T, 7-10, FordH 175

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

SW 5601 ETHNO-CULTURAL CONCEPTS IN SOCIAL WORK PRACTICE. 4 undergraduate credits, tuition*: Resident \$330; Non-resident \$957. 3 graduate credits, tuition*: Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Relation of ethno-cultural concepts to the development of social welfare policies and services, and social work practice. Critical examination of commonalities of principles and cross-ethnic issues that integrate ethno-cultural dimensions and identification of significant orientations toward welfare issues and practices among the four major ethnic minority groups of color (American Indian, Asian American, black, Hispanic). The contribution of each to effective interpersonal and intra-group relationships with the social service delivery system will be discussed. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20) Fall Qtr, ★Sec 1, T, 7-10, FordH 160

SW 5970 INDEPENDENT STUDY IN SOCIAL WORK. Credits arr, tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Independent study in areas of special interest to students and faculty. (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, Arr
Winter Qtr, Sec 2, Arr
Spring Qtr, Sec 3, Arr

Courses Meeting at the Hennepin County Government Center

The following courses meet in the Employee Development Classroom (Level A of the Hennepin County Government Center). Enter the building on the north side of 6th Street, under the skyway; take the escalator downstairs to Level A. Parking is available after 4 p.m. weekdays in the Hennepin County underground garage for \$2 maximum.

SW 5010 SEMINAR: SPECIAL TOPICS—INTRODUCTION TO SOCIAL WORK METHODS I. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Consideration of the nature, purpose, and function of the social work professional, including special emphasis on the knowledge and value base of practice. Introduction to the use of the social work interview

and the problem-solving process. *This course cannot be used to meet requirements for a Master of Social Work degree at the University of Minnesota.* (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 7, M, 4:45-7:45, Henn Co Govt Ctr

SW 5010 SEMINAR: SPECIAL TOPICS—GENDER ISSUES IN SOCIAL WORK PRACTICE. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Overview of how gender issues affect social and psychological functioning of men and women; concepts of feminist therapy and its impact on social work practice. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 25)

Fall Qtr, ★Sec 8, Th, 4:45-7:45, Henn Co Govt Ctr, Belling, Bilinkoff

SW 5010 SEMINAR: SPECIAL TOPICS—COMPARATIVE SOCIAL WORK METHODS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Overview of several models of social work practice methods, with emphasis on socio-cultural, ethnic, minority, and gender differences. (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 9, W, 4:45-7:45, Henn Co Govt Ctr

SW 5010 SEMINAR: SPECIAL TOPICS—ORGANIZATION AND COMMUNITY SYSTEMS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Basic theories of organizations and communities; implications of theories for professional practice. (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 10, M, 4:45-7:45, Henn Co Govt Ctr, Wattenberg

SW 5211 ADVANCED THEORIES OF HUMAN GROWTH AND CHANGE. 4 undergraduate credits, tuition*: Resident \$330; Non-resident \$957. 3 graduate credits, tuition*: Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

See course description for SW 5211 sec 1 above. (Prereq grad standing or 12 cr in social sciences. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 2, T, 4:45-7:45, Henn Co Govt Ctr

SW 5404 BEGINNING CHILD WELFARE PRACTICE. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Designed to help students explore, organize, and apply knowledge related to demands typical of child welfare practice. Includes analysis and intervention into a variety of problems and cases with special attention given to worker functioning. (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, M, 4:45-7:45, Henn Co Govt Ctr

SW 5414 SEMINAR: SPECIAL TOPICS—SOCIAL GROUP WORK. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Principles of social group work practice applicable to a variety of task and treatment groups. Small group as a social process to achieve task and treatment goals, communication in groups, decision-making, self-help, and therapeutic groups. Stages of group development and termination. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Spring Qtr, ★Sec 1, W, 4:45-7:45, Henn Co Govt Ctr, Macek

Weekend Master of Social Work (M.S.W.) Program

The School of Social Work in conjunction with Continuing Education and Extension are offering graduate students the opportunity to earn their M.S.W. degree through full-time weekend study. Students must register for three courses each quarter, but may elect to complete their required field work either concurrently or through 12-week, full-time summer block placements. The Weekend M.S.W. Program is highly structured and adheres to the current day school curriculum design and admissions standards, while allowing students the opportunity to maintain full-time employment. Program and admissions inquiries should be directed to Dr. Michael Graham, (612) 624-0390.

SW 5111 CONTEMPORARY POLICY AND PROGRAMS IN SOCIAL WELFARE. 4 undergraduate credits, tuition*: Resident \$330; Non-resident \$957. 3 graduate credits, Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

A framework for analysis of concepts and principles in social policy for social welfare programs and services. *Priority registration given to students admitted to the Weekend M.S.W. Program.* (Prereq grad standing or 12 cr in social science. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Spring Qtr, ★Sec 1, Sa, 12:05-3:05, FordH 130, Carter

SW 5211 ADVANCED THEORIES OF HUMAN GROWTH AND CHANGE. 4 undergraduate credits, tuition*: Resident \$330; Non-resident \$957. 3 graduate credits, Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Socio-psycho-biological factors associated with individual and group development as applied to social work practice. *Priority registration given to students admitted to the Weekend M.S.W. Program.* (Prereq grad standing or 12 cr in social science. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Fall Qtr, ★Sec 1, Sa, 3:30-6:30, FordH 130, Graham

SW 5349 SOCIAL WELFARE IN AMERICA. 4 undergraduate credits, tuition*: Resident \$330; Non-resident \$957. 3 graduate credits, Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Advanced survey of social services, public policies, and profession of social work—colonial to present. Issues include dependency, deviancy, crime, social security, public health, social reform, functions of public and voluntary institutions (charities, settlements). *Priority registration given to students admitted to the Weekend M.S.W. Program.* (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Fall Qtr, ★Sec 1, Sa, 12:05-3:05, FordH 130, Morrissey

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

SW 5601 ETHNO-CULTURAL CONCEPTS IN SOCIAL WORK PRACTICE. 4 undergraduate credits, tuition*: Resident \$330; Non-resident \$957. 3 graduate credits, Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Relation of ethno-cultural concepts to the development of social welfare policies and services, and social work practice. Critical examination of commonalities of principle and cross-ethnic issues that integrate ethnocultural dimensions and identification of significant orientations toward welfare issues and practices among the four major ethnic minority groups of color (American Indian, Asian American, black, Hispanic). The contribution of each to effective interpersonal and intra-group relationships with the social service delivery system will be discussed. *Priority registration given to students admitted to the Weekend M.S.W. Program.* (Prereq grad standing or 12 cr in social science. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Winter Qtr, ★Sec 1, Sa, 12:05-3:05, FordH 130, Williams

SW 8400 SOCIAL WORK METHODS I. 3 credits, Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Development of a conceptual understanding of, and skill in the social work process utilizing the ecological model and the problem-solving model as approaches for analysis. Emphasis is on ethics, assessment, interviewing skills, and goal-setting. *Priority registration given to students admitted to the Weekend M.S.W. Program.* (No prereq. Open only to students admitted to the University of Minnesota Graduate School. Limited to 30)

Fall Qtr, ★Sec 1, Su, 1-4, FordH 130, Graham

Fall Qtr, ★Sec 2, Su, 1-4, FordH 150

SW 8401 SOCIAL WORK METHODS II. 3 credits, Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Further development of a conceptual understanding of, and skill in use of various roles and specific interventions in working with individuals, families, and groups. *Priority registration given to students admitted to the Weekend M.S.W. Program.* (Prereq 8400. Open only to students admitted to the University of Minnesota Graduate School. Limited to 30)

Winter Qtr, ★Sec 1, Sa, 3:30-6:30, FordH 130

Winter Qtr, ★Sec 2, Sa, 3:30-6:30, FordH 150

SW 8402 SOCIAL WORK METHODS III. 3 credits, Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Differential use of social work knowledge and interventions based on utilizing such models as psycho-analytic, cognitive, behavioral, existential, social support, and crisis intervention. Additional emphasis on teamwork, evaluation, and termination. *Priority registration given to students admitted to the Weekend M.S.W. Program.* (Prereq 8400, 8401. Open only to students admitted to the University of Minnesota Graduate School. Limited to 30)

Spring Qtr, ★Sec 1, Sa, 3:30-6:30, FordH 130

Spring Qtr, ★Sec 2, Sa, 3:30-6:30, FordH 150

SW 8901 SOCIAL WORK METHODS. 3 credits, Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Logic, methods, and techniques of scientific inquiry in social work. Nature and functions of theory, models, assumptions, problem formulation, causal analysis, conceptualization, operationalism, and hypothesis formulation. *Priority registration given to students admitted to the Weekend M.S.W. Program.* (No prereq. Open only to students admitted to the University of Minnesota Graduate School. Limited to 30)

Winter Qtr, ★Sec 1, Su, 1-4, FordH 130, Graham

SW 8902 DIRECT PRACTICE EVALUATION. 3 credits, Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Intensive, advanced course focusing on evaluation of social work direct practice. Students design evaluations which incorporate current evaluation methods and principles derived from research, theory, practice wisdom, and their own experience. Evaluation methods include single-system designs, event analysis, client-focused evaluations, and practitioner-focused evaluations. *Priority registration given to students admitted to the Weekend M.S.W. Program.* (Prereq 8901 or equivalent. Open only to students admitted to the University of Minnesota Graduate School. Limited to 30)

Spring Qtr, ★Sec 1, Su, 1-4, FordH 130, Graham

SW 8903 PROGRAM EVALUATION. 3 credits, Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Conceptual, methodological, political, psychological, and administrative factors related to conduct and consequences of social work program evaluation. Social programs as cause and effect models, types and strategies of evaluation, and appraisal of selected social work research literature. *Priority registration given to students admitted to the Weekend M.S.W. Program.* (Prereq 8901 or equivalent. Open only to students admitted to the University of Minnesota Graduate School. Limited to 30)

Spring Qtr, ★Sec 1, Su, 1-4, FordH 150

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Child Abuse Prevention Studies (CAPS) Program

The School of Social Work in conjunction with Continuing Education and Extension are offering a post-baccalaureate certificate program on child abuse prevention. Program and admission inquiries should be directed to the CAPS Certificate Coordinator, Continuing Education and Extension Counseling, 314 Nolte Center, 315 Pillsbury Drive S.E., Minneapolis, MN 55455-0197; telephone (612) 625-2500. Please see page 485 in this Bulletin for a description of this program.

SW 5301 CHILD ABUSE PREVENTION I: RESEARCH AND THEORY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

First of three-course sequence on prevention of child abuse and neglect, provides conceptual (research and theory) framework for developing primary and secondary preventive interventions. *Priority registration given to 20 students admitted to the CAPS Program.* (Prereq admitted to CAPS program and written Δ or post-baccalaureate student with written Δ . Qualified students may register for graduate credit at the University of Minnesota. Limited to 35)

Fall Qtr, ★Sec 1, T, 4-7, McNH 146, StP Campus, Erickson, Gilgun

SW 5301 CHILD ABUSE PREVENTION II: PROGRAM DEVELOPMENT, IMPLEMENTATION, AND EVALUATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Second of three-course sequence on prevention of child abuse and neglect, providing skills for program design; implementation, and evaluation for children at risk. *Priority registration given to 20 students admitted to the CAPS Program.* (Prereq 5301, admitted to CAPS program and written Δ or post-baccalaureate student with written Δ . Qualified students may register for graduate credit at the University of Minnesota. Limited to 28)

Winter Qtr, ★Sec 1, T, 4-7, McNH 146, StP Campus, Erickson, Gilgun

SW 5301 CHILD ABUSE PREVENTION III: STRATEGIES FOR POLICY AND SYSTEMS CHANGE. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Third of three-course sequence on prevention of child abuse and neglect, providing understanding of social policy and systems change for children at risk. *Priority registration given to 20 students admitted to the CAPS Program.* (Prereq 5302, admitted to CAPS program and written Δ or post-baccalaureate student with written Δ . Qualified students may register for graduate credit at the University of Minnesota. Limited to 28)

Spring Qtr, ★Sec 1, T, 4-7, McNH 146, StP Campus, Erickson, Gilgun

Sociology (Soc)

(909 Social Sciences: 624-4300)

College of Liberal Arts

Textbooks for most Soc courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also General College courses in social and behavioral sciences; Family Social Science; Political Science; Social Work; and The Compleat and Practical Scholar noncredit courses)

William Brustein, Associate Professor

Robert Fulton, Professor

Karen S. Louis, Professor in Educational Policy and Administration

Dario Menanteau, Professor of Rural Sociology, Associate in Sociology

Most courses for a major in sociology are available through Extension Classes. For information about completing a major in sociology, call (612) 625-3898.

Students interested in a major should discuss plans with the sociology department academic adviser (624-4300).

B.A. Major Sequence, General Option

Major Requirements

1001, 3201 or 3201H, 3401 or 3401H

3801, 3802, 3803 (should be taken soph yr if possible)

A theory course from 5701, 5703, 5705, 5711

16 additional 3000- or 5000-level sociology cr

4 credits of major project after all required major course work and upper division composition course are completed

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Major Requirements for Sociology of Law, Criminology, and Deviance Option For the B.A. Degree:

1001, 3201 or 3201H or 3401 or 3401H

3801, 3802, 3803 (should be taken soph yr if possible)

5701 or 5703 or 5705 or 5711

3101, 3102

Three courses chosen from 5101, 5102, 5104, 5105, 5107, 5108, 5111, 5114, 5125, 5135, 5141, 5142, 5147, 5148, 5161, 5162

4 credits of major project after all required major course work and upper division composition course are completed

B.S. Major Sequence

Major Requirements

1001, 3801, 3802, 3803, 3201, 3401

One of the following: 5701, 5703, 5705, 5711

16 credits of 3000- or 5000-level sociology electives

4 credits of required research design in sociology

27 credits from list of required supportive field courses, including a two-quarter sequence (minimum 8 credits) in one area (list available from the Sociology Department advisor: 624-4300)

General Information

Check with the undergraduate advisor for possible major requirement changes. Majors must submit a program proposal, prepared after meeting with the sociology undergraduate advising office.

Registration in all major requirements including supportive courses must be A-F unless the course is only offered S-N. Students must maintain a C average in sociology courses, and receive at least a C in all supportive courses for the B.S. sequence.

A maximum of 5 credits of D are acceptable in sociology courses.

Students are advised to register as soon as possible (preferably as sophomores) for 3801, 3802, and 3803.

The Department of Sociology offers an honors degree through the Honors Division of CLA. For more information, students should inquire in the Honors Program Office, 115 Johnston Hall, 624-5522. Honors sections of 1001(H), 3201(H), 3401(H), 3801(H), 3802(H), and 3803(H) are offered only through day school.

You need not be majoring in sociology to register for these classes.

A minor in sociology is also available. Interested students should call CEE Counseling, 625-2500 or the sociology advisor: 624-4300.

Joint Day/Extension Classes—Extension students must register for Extension offerings of sociology courses. However, in a given quarter, if a course is offered through day school and not in Extension, an exception may be granted for the Extension student to take the day school offering. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Continuing Education for Women (CEW) section available in the following course: Soc 3501

Soc 1001 INTRODUCTION TO SOCIOLOGY. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Introduction to the scientific study of social behavior. Overview of the major theories, methods, concepts, and research findings. Examination of the characteristics of the basic social units (social relations, groups, organizations, institutions, society), their patterns of interrelation, and processes of change. (No prereq)
Fall Qtr, Sec 1, T, 6:20-8:50, AndH 370, Brustein
Winter Qtr, Sec 2, T, 6:20-8:50, AndH 370
Spring Qtr, Sec 3, M, 6:20-8:50, AndH 270

Soc 1003 SOCIAL PROBLEMS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Sociological analysis of major contemporary problems; theory behind the causes, discussion of methods for studying them, and analysis of potential solutions. Problems may include poverty, racial discrimination, inequality, sex roles, crime, drugs, population problems, and pollution. (No prereq)
Spring Qtr, Sec 1, W, 6:20-8:50, AndH 210

Soc 1004 AMERICAN RACE RELATIONS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Sociological overview of relations between American racial minorities (Afro-American, Chicano, Native American, Asian) and the dominant majority. Consideration of migration and settlement patterns; community and family life; gender roles; education and labor force participation; inequalities in wealth, status, health, and welfare; discrimination and institutional racism; public policy responses. (No prereq)
Winter Qtr, Sec 1, Th, 6:20-8:50, AndH 230

Soc 3101 (formerly CJS 3101) INTRODUCTION TO AMERICAN CRIMINAL JUSTICE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Components and dynamics of the criminal justice system as well as its philosophical underpinnings. (No prereq)

Fall Qtr, Sec 1, M, 6-8:30, AndH 210

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Soc 3102 INTRODUCTION TO CRIMINAL BEHAVIOR AND SOCIAL CONTROL. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Introduction to the basic issues in criminology and the sociology of law and social control organizations. (Prereq 3101 or equivalent)

Winter Qtr, Sec 1, M, 6:20-8:50, BlegH 245

Soc 3201 PRINCIPLES OF SOCIAL PSYCHOLOGY. 5 credits, \$3506, tuition*: Resident \$367.50; Non-resident \$1065.75.

Ideas and findings related to social psychology; experience in developing empirically based knowledge in social science. (Prereq 1001 or equivalent. Limited to 40)

Winter Qtr, ★Sec 1, M, Lect, 6-8:30, BlegH 105;
W, Lab, 6:15-8, BlegH 105

Soc 3315 (formerly 5315) LATIN AMERICAN SOCIETIES IN TRANSITION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Relationship of population, technology, and organization structure to levels of modernization among Latin American nations. Differentiation, diffusion, innovation, and social conflict as precipitants of social change. (Prereq 8 cr in sociology, economics, anthropology or political science or #)

Fall Qtr, Sec 1, T, 6:20-8:50, AndH 350,
Menanteau

(See also related courses in History)

Soc 3401 PRINCIPLES OF SOCIAL ORGANIZATION. 5 credits, \$3505, tuition*: Resident \$367.50; Non-resident \$1065.75.

How and why social organization is possible. Major concepts and theories of social structure, primary forms of social organization (groups, communities, networks, formal organizations), basic social processes (integration, differentiation, regulation, change), and how social organization evolves from individual decision making. Course content varies. (Prereq 1001, 3801 or equivalent. Limited to 40)

Fall Qtr, ★Sec 1, M, Lect, 6-8:30, BlegH 420; W,
Lab, 6:15-8, BlegH 250

Soc 3405 INEQUALITY: INTRODUCTION TO STRATIFICATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60. (IS)

Inequality—causes, dimensions, and consequences. Inequality in American society—class, gender, and race; cross-national patterns of inequality; relationship between economic and political inequality; role of schools in transmission of inequality; public policies affecting inequality. (Prereq 1001 or #)

Winter Qtr, Sec 1, T, 6:20-8:50, HHCtr 30,
Brustein

Soc 3501 THE FAMILY STRUCTURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Study of the family in contemporary American society with special attention to historical and cross-cultural comparisons; interrelationships with other social institutions, socialization, patterns of mate selection, life cycle processes and norms of human sexuality. (Prereq 1001 or #)

Winter Qtr, Sec 1, Th, 9:30 a.m.-12, MacP. Offered
through Continuing Education for Women

Soc 3503 SEX, ROMANCE AND RELATIONSHIPS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Sociological, historical, and feminist perspectives on gender relationships and personal life; ideas of masculinity and femininity; the social and historical construction of love and romance, intimacy, emotional and personal life, and sexuality. (Prereq 1001)

Fall Qtr, Sec 1, W, 6:20-8:50, BlegH 215

(See also PSch 0815, Identity and Intimacy in Close Relationships)

Soc 3671 COMPARATIVE RURAL SOCIETIES: LATIN AMERICA. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Social and cultural change in Latin America. Demographic and ecological characteristics, institutional structure and its accompanying associations; linkages with outside and world views. (Prereq 8 cr in sociology, anthropology, economics, or political science or #)

Spring Qtr, Sec 1, T, 6:20-8:50, BlegH 120,
Menanteau

(See also related courses in History)

Soc 3801 SOCIOLOGICAL METHODS I: DESCRIPTIVE STATISTICS. 5 credits, tuition*: Resident \$367.50; Non-resident \$1065.75.

Descriptive statistics in analysis of sociological data, measures of central tendency, deviation, correlation and regression graphs, simple treatment of three and four variables. (Prereq intermediate algebra or GC 0631. Limited to 50)

Fall Qtr, ★Sec 1, TTh, Lect, 6:30-7:45, BlegH 130;
TTh, Lab, 8-9, BlegH 90

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Soc 3802 SOCIOLOGICAL METHODS II: STATISTICAL INFERENCE. 5 credits, tuition*: Resident \$367.50; Non-resident \$1065.75.

Statistical inferences, probability, hypothesis tests, use of statistical reasoning in analysis of sociological data. (Prereq 3801 or equivalent. Limited to 50)

Winter Qtr, ★Sec 1, TTh, Lect, 6:30-7:45, BlegH 130; TTh, Lab, 8-9, BlegH 440

Soc 3803 SOCIOLOGICAL METHODS III: RESEARCH METHODS. 5 credits, tuition*: Resident \$367.50; Non-resident \$1065.75.

Principles of research design, data collection, and analysis focusing on field observation and survey design and analysis. Practice in data collection and analysis. (Prereq 3801, 3802 or equivalent or #. Limited to 50)

Spring Qtr, ★Sec 1, TTh, Lect, 6:30-7:45, BlegH 130; TTh, Lab, 8-9, BlegH 440

Soc 3954 SOCIOLOGICAL PERSPECTIVES ON RACE, CLASS, AND GENDER. 4 credits, §Afro 3954, tuition*: Resident \$294; Non-resident \$852.60.

Societal-level analysis of race, class, and gender inequality. How the three forms of inequality operate independently and in conjunction with one another in American institutions and society. (No prereq)

Fall Qtr, Sec 1, Th, 6:20-8:50, AndH 270

Soc 5705 BACKGROUNDS OF MODERN SOCIAL THOUGHT. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Originators of modern sociological theory examined through original texts: Marx, Weber, Durkheim, Freud, and Gilman. Division of labor, social cohesion and social control, gender and social reproduction, class relations and the social organization of production, norms and values, and history. (Prereq 8 cr in social sciences or #. Qualified students may register for graduate credit at the University of Minnesota)

Spring Qtr, Sec 1, T, 6:20-8:50, BlegH 230, Brustein

(See also CSch 0205, Marx Is Dead: Are His Ideas?)

Soc 5953 SOCIOLOGY OF EDUCATION. 4 credits, §EdPA 5190, §SPFE 5190, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Advanced studies in social aspects of education including schooling as a socialization process, the social structure of education, the role of school in social

change. Theory and empirical research. (Prereq Soc 1001. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with EdPA 5190. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★Sec 1, T, 3:35-6:55, PeikH 165, Louis

Soc 5954 SOCIOLOGY OF GENDER. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Historical, contemporary, and feminist perspectives on the social organization and construction of gender roles and relationships. Examines how gender shapes and is shaped by elements of social organization such as family, economy, politics and ideology. (Prereq 8 cr social sciences or #. May not be taken for graduate credit at the University of Minnesota)

Winter Qtr, Sec 1, W, 6:20-8:50, BlegH 215

Soc 5960 MULTIDISCIPLINARY PERSPECTIVES ON AGING. 4 credits, §AdEd 5440, Educ 5440, CPsy 5305, HSU 5009, PA 5414, PubH 5737, SW 5024, Phar 5009, SAHP 5009, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

A multidisciplinary introduction to aging and the aging process. Topics include biological, social, psychological aspects of aging; theories of aging; death and bereavement; issues and problems of older adults in America; human services and their delivery systems such as social services, health, nutrition, long-term care, and education; public policy and legislation; environments and housing; advocates; retirement. The AUCA-sponsored course is being offered by a number of departments. Students may register for the course through the department of their choice as noted. For information, contact Prof. Donald McTavish in Sociology, 624-4300. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with AdEd 5440, CPsy 5305, Phar 5009, HSU 5009, PA 5414, PubH 5737, SW 5024. A joint Day/Extension class)

Fall Qtr, ★Sec 1, MW, 4:40-6:25, MoosT 2-690

(Limited to a combined total of 37 Extension students)

Spring Qtr, Sec 2, MW, 4:40-6:25, MoosT 2-690

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Soc 5960 TOPICS IN SOCIOLOGY: AIDS, A SOCIOLOGICAL PERSPECTIVE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

AIDS is a social crisis. It is a medical emergency that embraces both private problems and public issues, which demand sociological attention. The course will explore the multi-sided character of the disease and its impact on contemporary American society and the world. The instructor and persons knowledgeable in different AIDS-related concerns will address the many-sided issues and problems that AIDS currently presents. (Prereq Soc 1001 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ⓪Sec 3, W, 4-7, BlegH 10, Fulton

Soc 5970 DIRECTED STUDIES. 2 credits, tuition* each credit: Resident \$147; Non-resident \$426.30; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Meets concurrently with a multidisciplinary course, ID 5615-5616-5617 (Ways of Knowing: Six Disciplines Examined), page 244. Faculty from six different disciplines meet together with students weekly for a full academic year to discover how various academic disciplines ask questions, gather information, and validate theories. Disciplines examined include African-American studies, agriculture and applied economics, art history, economics, and genetics. Students must enroll in each quarter for four credits of the ID 5615-5616-5617 or four credits of corresponding special topics/directed studies courses; students must enroll all three quarters to receive credit. Limited to a combined total of 22 students. *For information about registration and graduate credit, call (612) 625-3898.*

Soil Science (Soil)

(439 Borlaug Hall: 625-1244)

College of Agriculture

Textbooks for most Soil courses are available at Books Underground on the St. Paul campus (624-9200).

(See also Horticulture; and Research Explorations [REX])

James L. Anderson, Professor of Soil Science
Paul R. Bloom, Professor of Soil Science
Terence Cooper, Associate Professor of Soil Science

Soil 1020 THE SOIL RESOURCE. 5 credits, \$5022, tuition*: Resident \$350; Non-resident \$1015.

Introduction into the physical, chemical and microbiological properties of soil. Use of the soil classification system to understand the use of soil survey information for land use planning. Concepts of soil fertility for understanding environmental planning and conservation decisions. (No prereq. Meets concurrently with 5022. Limited to 20)

Fall Qtr, ★Sec 1, TTh, 6:20-9:20, BorH 365, StP Campus, Cooper

(See also ID 5525-5526, Garbage, Government, and the Globe)

Soil 5022 INTRODUCTORY SOIL SCIENCE FOR TEACHERS. 4 credits, \$1020, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See description for Soil 1020. (Prereq 1 course in college chemistry, a degree in education or #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 1020. Limited to 10)

Fall Qtr, ★Sec 1, TTh, 6:20-9:20, BorH 365, StP Campus, Cooper

Soil 5310 SOIL CHEMISTRY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Chemical processes in soil; composition of soil minerals and organic matter, solubility equilibria, adsorption/desorption, ion exchange, formation of soluble complex's, oxidation/reduction, acidity, alkalinity. Discusses solution of problems related to environmental degradation, plant nutrition and soil genesis. For further information, telephone Prof. Paul Bloom at (612) 625-4711. (Prereq Chem 3100 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ⓪Sec 1, MWF, 4:05-4:55, BorH 375, StP Campus, Bloom

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Soil 5560 INTERPRETATION OF LAND RESOURCES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Techniques used in preparing soil maps of varying scales. Information available from soil maps and accompanying reports evaluated for use in agriculture, engineering, waste treatment, forestry, and land planning. How soil survey information can be used to the fullest extent by both laypersons and the scientific community. (Prereq 3520 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ①Sec 1, TTh, 4:30-5:45, BorH 375, StP Campus, Anderson

South Asian and Middle Eastern Languages and Cultures

(See Area Studies Programs, page 75; and the Institute of Languages and Literatures, page 237.)

Internships and Study Abroad—Internships and directed study are arranged in India and Morocco through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

SPAN

(See Student Project for Amity Among Nations)

Spanish (Span)

(34 Folwell Hall: 625-5858)

Spanish and Portuguese

College of Liberal Arts

Textbooks for most Span courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Portuguese, page 297; History; PSch 0980, Spanish for Travelers; and REX 0903, The Pragmatics of Word Order in Spoken Spanish)

René Jara, Professor
Carol Klee, Associate Professor
Francisco Ocampo, Assistant Professor
Joanna O'Connell, Assistant Professor
Luis Ramos-Garcia, Assistant Professor

Antonio Ramos-Gascón, Professor
Roberto Reis, Associate Professor
Ronald Sousa, Professor of
Nicholas Spadaccini, Professor
Constance Sullivan, Associate Professor
Hernán Vidal, Professor
Anthony N. Zahareas, Professor

Read about language laboratories fees on page 51.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Spanish and Portuguese. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Study Abroad Opportunities—A wide variety of Spanish courses, including internships, are offered in several Spanish-speaking countries through the Global Campus. For information, call the Global Campus at 625-3379.

Internship and Study in Latin America—Internships and directed study are arranged in Ecuador through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

Students who have had no Spanish should enroll in Span 1101. Those CLA students who have already studied Spanish are required to take a proficiency exam before enrolling. Contact the Language Center for details on testing dates (624-6811).

Span 1101-1102-1103 BEGINNING SPANISH, carrying 5 degree credits per unit, comprises the standard course in first-year Spanish. The principal aim of the course is to teach students to understand and speak Standard Spanish so that they can communicate in Spain, Spanish America, and among U.S. Spanish-speaking minority groups. As students progress through the 1101-1103 sequence, more emphasis will be placed each quarter on reading and writing, in that order. This sequence is recommended for those planning to travel in Spanish-speaking nations, to continue the study of Spanish, or to satisfy college language requirements.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Span 1101-1102-1103 BEGINNING SPANISH.

5 credits each quarter, tuition* each quarter: Resident \$350; Non-resident \$1015. (IS)

Basic listening, speaking, reading, and writing skills. Stress on the development of communicative competence. Some cultural readings. (No prereq for 1101; 1101 or # for 1102; 1102 or # for 1103. Limited to 25)

Fall Qtr, 1101, ★Sec 1, MW, 6:10-8:15, AkerH 317

Fall Qtr, 1101, ★Sec 2, MW, 6:10-8:15, AkerH 319

Fall Qtr, 1101, ★Sec 3, MW, 6:10-8:15, SmithH 111, JonesH 4 (Limit 50)

Fall Qtr, 1101, ★Sec 4, MW, 6:10-8:15, KoltH S135

Fall Qtr, 1101, ★Sec 5, MW, 6:10-8:15, KoltH S136

Fall Qtr, 1101, ★Sec 6, TTh, 6:10-8:15, AmundH 116

Fall Qtr, 1101, ★Sec 7, TTh, 6:10-8:15, SmithH 111

Fall Qtr, 1101, ★Sec 8, TTh, 6:10-8:15, AmundH 120

Fall Qtr, 1101, ★Sec 9, TTh, 6:10-8:15, FolH 104, 134 (Limit 50)

Fall Qtr, 1101, ★Sec 10, TTh, 6:10-8:15, FolH 214

Winter Qtr, 1101, ★Sec 11, TTh, 6:10-8:15, AmundH 116, 156 (Limit 50)

Winter Qtr, 1102, ★Sec 1, MW, 6:10-8:15, AkerH 309

Winter Qtr, 1102, ★Sec 2, MW, 6:10-8:15, AmundH 156, SmithH 121 (Limit 50)

Winter Qtr, 1102, ★Sec 3, TTh, 6:10-8:15, SmithH 111

Winter Qtr, 1102, ★Sec 4, TTh, 6:10-8:15, SmithH 121

Winter Qtr, 1102, ★Sec 5, TTh, 6:10-8:15, AkerH 317, 215 (Limit 50)

Spring Qtr, 1102, ★Sec 6, MW, 6:10-8:15, AmundH 120, 158 (Limit 50)

Spring Qtr, 1102, ★Sec 7, TTh, 6:10-8:15, AmundH 120

Spring Qtr, 1103, ★Sec 1, MW, 6:10-8:15, SmithH 111

Spring Qtr, 1103, ★Sec 2, MW, 6:10-8:15, KoltH S132, SmithH 121 (Limit 50)

Spring Qtr, 1103, ★Sec 3, TTh, 6:10-8:15, Phys 236A

Spring Qtr, 1103, ★Sec 4, TTh, 6:10-8:15, SmithH 111, 121 (Limit 50)

Span 1104 INTERMEDIATE SPANISH. 5 credits, tuition*: Resident \$350; Non-resident \$1015. (IS)

Speaking and comprehension; development of reading and writing skills based on materials from Spain and Spanish America. Grammar review; compositions and oral presentations. (Prereq 1103 or 1205 or #. Limited to 25)

Fall Qtr, ★Sec 1, MW, 6:10-8:15, FolH 134

Fall Qtr, ★Sec 2, TTh, 6:10-8:15, AkerH 317

Fall Qtr, ★Sec 4, MW, 6:10-8:15, KoltH S139

Spring Qtr, ★Sec 3, MW, 6:10-8:15, AmundH 124

Span 1105 INTERMEDIATE SPANISH. 5 credits, tuition*: Resident \$350; Non-resident \$1015. (IS)

For description, see 1104. (Prereq 1104 or #. Limited to 25)

Fall Qtr, ★Sec 1, TTh, 6:10-8:15, AkerH 319

Winter Qtr, ★Sec 2, TTh, 6:10-8:15, KoltH S134

Winter Qtr, ★Sec 3, MW, 6:10-8:15, AmundH 104

Span 1106 INTERMEDIATE SPANISH. 5 credits, tuition*: Resident \$350; Non-resident \$1015.

Speaking and comprehension; development of reading and writing skills based on materials from Spain and Spanish America. Grammar review; compositions and short presentations. (Prereq 1105 or #. Limited to 25)

Winter Qtr, ★Sec 1, MW, 6:10-8:15, AmundH 124

Spring Qtr, ★Sec 2, MW, 6:10-8:15, AmundH 104

Spring Qtr, ★Sec 3, TTh, 6:10-8:15, KoltH S140

Span 1503 CULTURE, CIVILIZATION OF MODERN LATIN AMERICA: SOCIETIES IN CHANGE. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Cultural implications arising from struggles for political and economic independence during the 19th and 20th centuries. Cultural characteristics of principal regions of contemporary Latin America. Causes of developmental differences. Taught in English. (No prereq. May not be used for Spanish or Portuguese major credit)

Winter Qtr, Sec 1, M, 6:10-9:30, FolH 419

Span 3002 READING FOR SPEED AND COMPREHENSION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Sharpen reading skills, expand vocabulary, improve comprehension. Variety of practical and literary materials will be read; class time will focus on discussion of readings, brief student presentations; short papers to be written at home on topics related to readings. (Prereq 1106 or equivalent. Limited to 30)

Fall Qtr, ★Sec 1, Th, 6:10-8:40, FolH 240

Winter Qtr, ★Sec 2, Th, 6:10-8:40, FolH 240

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Span 3004 WRITTEN COMMUNICATION: FORMAL AND INFORMAL. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Exploration of different composition types in Spanish. Individual and class exercises based on model writings. Grammar review as needed. Emphasis on clarity of expression and structure of composition. (Prereq 1106 or equiv. Limited to 20)
Spring Qtr, ★Sec 1, T, 6:10-8:40, FolH 116

Span 3005 ORAL COMMUNICATION: SPEAKING AND LISTENING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Dialogues, group discussions, simulated situational conversations, interviews, skits, debates based on themes from sound and video tapes, records, speakers from Spain and Spanish America. Emphasis on fluency in speaking and understanding of oral expression. (Prereq 1106 or equivalent. Limited to 15)

Fall Qtr, ★Sec 3, Th, 6:10-8:40, FolH 114

Winter Qtr, ★Sec 1, T, 6:10-8:40, FolH 426

Span 3022 BUSINESS SPANISH. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Emphasizes building a vocabulary of Spanish business terms, developing skills in report writing, and learning the proper format for business and other formal communications. Developing conversational fluency on trade-related topics is stressed. (Prereq 1105 or equivalent. Limited to 25)

Spring Qtr, ★Sec 1, W, 6:10-8:40, FolH 116

Span 3104 THE ART OF READING LITERARY TEXTS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Critical reading of Spanish and Spanish-American texts; works representing principal genres—novel, drama, poetry, essay; diverse approaches to literature. Terminology of criticism, literary problems and techniques. (Prereq 3002 or #. Limited to 15)

Winter Qtr, ★Sec 2, Th, 6:10-8:40, FolH 419

Spring Qtr, ★Sec 1, Th, 6:10-8:40, FolH 419

Span 3605 POLITICS IN SPANISH AND LATIN AMERICAN LITERATURE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

The civil wars in Spain; national liberation movements and political upheavals in Latin America. Taught in English. (No prereq. May not be used for Spanish or Portuguese major credit. Limited to 50)

Spring Qtr, ★Sec 1, M, 6:10-8:40, FolH 134

(See also History)

Span 3614 DON QUIJOTE: STUDY OF LOST ILLUSIONS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

An analysis of Cervantes's Don Quijote and an examination of its reception from the early 1600s to modern times. A component of the course is Don Quijote's reception in Spanish America. Taught in English. (No prereq. May not be used for Spanish or Portuguese major credit. Limited to 50)

Fall Qtr, ★Sec 1, T, 6:10-8:40, NichH 207

Span 3950 FIGURES IN SPANISH-AMERICAN LITERATURE. 4 credits this offering (maximum 12 cr), tuition*: Resident \$294; Non-resident \$852.60.

One major writer or group of writers whose work has had an impact on thought, literature, or social problems. (Prereq 3104 or #)

Winter Qtr, Sec 1, T, 6:10-8:40, FolH 419

Reading Spanish

Span 0221 is specifically designed for individuals who desire only a reading knowledge of the language. The Spanish language requirements for a graduate degree also may be satisfied by successfully passing an examination given at the end of the course. Graduate students should check with their advisers for specific language requirements in their field of study.

Span 0221 READING SPANISH. No credit, tuition*: \$280. (IS)

This course is designed solely to impart a basic reading knowledge of the Spanish language; full time is devoted to intensive reading and translation of a variety of texts. Since this approach deals with only one aspect of the language—reading—great skill can be acquired in a short time. At the end of the one quarter the student may take the equivalent of the Spanish Graduate Reading Examination. The department will certify to the Graduate School a reading knowledge of Spanish upon successful completion of this examination. **Must be taken S-N.** (No prereq. Limited to 26)

Winter Qtr, ★Sec 1, W, 6:20-8:40, FolH 419

Spring Qtr, ★Sec 2, T, 6:20-8:40, FolH 419

Spanish 0221 is offered as a Summer Extension Class

Spanish-Portuguese (SpPt)

(34 Folwell Hall: 625-5858)

Spanish and Portuguese College of Liberal Arts

Textbooks for most SpPt courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Joint Day/Extension Classes—You may register through Extension for most day school classes scheduled before 4 p.m. in Spanish-Portuguese. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Speech-Communication (Spch)

(460 Folwell Hall: 624-5800)

College of Liberal Arts

Textbooks for most Spch courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also English; General College; The Compleat and Practical Scholar noncredit courses; Linguistics; Journalism; and Rhetoric)

Donald R. Browne, Professor
 Karlyn Kohrs Campbell, Professor
 Sheldon Goldstein, Professor
 Dean Hewes, Professor
 Becky Kroll, Assistant Professor
 Scott Poole, Professor
 David Rarick, Associate Professor
 George L. Shapiro, Professor
 Judith Van Putten, Lecturer

Many courses needed for a major in Speech-Communication can be completed in the evening.

Most courses required in the undergraduate major are offered over a two-year period of time. Interested students should discuss plans with a CEE adviser (625-2500). Students deciding to work for the major should confer with a departmental adviser early in their work (call 624-5800 for an appointment). (See the Degrees and Certificates section of this Bulletin for information on a master's degree in speech-communication.)

B.A. Major sequence

Required Preparatory Courses: 1101, 1102. These courses are offered yearly.

Major Requirements (Effective Sept. 16, 1990)

Minimum of 36 3xxx-5xxx cr in speech-communication to include: 3211, 3401 and 3601 (may not include 3970, 3980, "X" registrations). Also, two courses at 3xxx level in composition, as well as a research requirement: Spch 3501 or an out-of-department course in research methods (a list of such courses is available in the department's Undergraduate Advising Office, 432 Folwell Hall). The composition and research requirements are in addition to the minimum of 36 3xxx-5xxx cr in speech-communication.

In order to qualify for major status, students must first take Spch 1102, 3211, 3401 and 3601, with an overall GPA of 2.50. Students wishing to emphasize speech-communication in IBIM, BIS, UWW, and other individually designed programs must obtain a 2.50 in any two of those courses.

The program must be planned in conference with and approved by a departmental major adviser.

Although many courses are offered in evening classes, the selection a student will have will be limited.

A minor is also available in Speech-Communication. Interested students should contact CEE Counseling, 625-2500.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Speech-Communication. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Continuing Education for Women (CEW) section available in the following course: Spch 3431

You must attend the entire first Spch class session or your space in that class will be forfeited.

Spch 1101 FUNDAMENTALS OF SPEECH-COMMUNICATION: ORAL COMMUNICATION. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Basic understanding of oral communication processes. Study and application of essential elements in oral communication. Consideration of criticism and response to oral discourse. Opportunities for individual speaking. (No prereq. Limited to 18)

Fall Qtr, ★Sec 1, M, 6-9, FolH 318

Fall Qtr, ★Sec 2, Th, 6-9, FolH 419

Winter Qtr, ★Sec 3, M, 6-9, FolH 318

Spring Qtr, ★Sec 4, M, 6-9, FolH 326

Spring Qtr, ★Sec 5, Th, 6-9, FolH 318

(See also PSch 0851, Creating Effective Presentations: The Performer's Perspective)

Spch 1102 FUNDAMENTALS OF SPEECH-COMMUNICATION: COMMUNICATION PROCESS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Introduction to the identification and analysis of variables in intrapersonal, interpersonal, and group communication. (No prereq)

Winter Qtr, Sec 1, W, 6-9, NichH 213

Spring Qtr, Sec 2, W, 6-9, Arch 35

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Spch 1313 ANALYSIS OF ORAL ARGUMENT. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Strategies for analyzing and evaluating arguments received aurally. Problems in listening and responding to argument. (No prereq. Limited to 18)

Fall Qtr, ★Sec 1, W, 6-9, FolH 312

Winter Qtr, ★Sec 2, T, 6-9, FolH 318

Spring Qtr, ★Sec 3, M, 6-9, FolH 312

Spch 3111 LEADERSHIP COMMUNICATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Interdisciplinary study of theory and practice of leadership. Theoretical approaches to management. Interpersonal communication skills in leadership practice; persuasion and cross-value communication in effective leadership. Experience in task-oriented small group communication. (No prereq. Limited to 35)

Fall Qtr, ★Sec 1, W, 6-9, FolH 344

Winter Qtr, ★Sec 2, M, 6-9, FolH 148

Spring Qtr, ★Sec 3, TTh, 4-6, FolH 50, Shapiro

(A joint Day/Extension class limited to 4 Extension students)

Spch 3211 DETERMINANTS OF BROADCAST PROGRAMMING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Historical development and contemporary aspects of broadcast programming. How governmental, industrial, and public organizations influence program decisions. "Problem" areas of programming. (No prereq. Limited to 100)

Spring Qtr, ★Sec 1, W, 6-9, FolH 340, Browne

Spch 3401 THEORIES OF PERSON TO PERSON COMMUNICATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Theories of interpersonal communication and their usefulness for particular purposes. (Prereq 1102 or #, Psy 1001. Limited to 100)

Fall Qtr, ★Sec 1, T, 6-9, FolH 208, Hewes

Spch 3402 COMMUNICATION IN RELATIONSHIPS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

A discussion of the effects of communication on the definition and development of friendships and romantic relationships. (Prereq 1102. Limited to 45)

Winter Qtr, ★Sec 1, T, 6-9, FolH 208, Hewes

(See also PSch 0845, You Talk Man, I'll Talk Woman: Bridging the Communication Gap)

Spch 3411 SMALL GROUP COMMUNICATION PROCESSES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Cooperative thinking in task-oriented groups. Planning, preparing for, participating in, and leading private and public meetings. *May require group meetings outside regularly scheduled class hours listed below.* (Prereq 1101 or #. Limited to 18)

Fall Qtr, ★Sec 1, T, 6-9, FolH 419

Winter Qtr, ★Sec 2, W, 6-9, FolH 326

Spring Qtr, ★Sec 3, T, 6-9, FolH 326

Spch 3431 THE ROLE OF PERSUASION IN THE MODERN WORLD. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Persuasion in interpersonal, organizational, intracultural, and intercultural relationships. Contemporary and historical comparisons and contrasts. Design and implementation of projects. (No prereq. Sophomore standing recommended. Limited to 30)

Fall Qtr, ★Sec 1, Th, 6-9, FolH 318

Winter Qtr, ★Sec 2, W, 9 a.m.-12, MacP. Offered through Continuing Education for Women

Spring Qtr, ★Sec 3, Th, 6-9, FolH 326

Spch 3441 COMMUNICATING IN ORGANIZATIONS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Theory and practice of communicating in organizations. How communication creates, maintains, and changes organizational culture. Role of individual communicator in organizational culture. (Prereq 1102 or 1101 or equivalent. Limited to 22)

Winter Qtr, ★Sec 1, Th, 6-9, FolH 318

Spring Qtr, ★Sec 2, T, 6-9, FolH 334

Spch 3451 INTERCULTURAL COMMUNICATION: THEORY AND PRACTICE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Theories of and factors influencing intercultural communication. Development of effective intercultural communication skills. (Prereq planning an intercultural experience. Limited to 20)

Winter Qtr, ★Sec 1, M, 6-9, FolH 50

Spch 3452 COMMUNICATION AND THE INTERCULTURAL REENTRY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Communication processes during return to home culture after intercultural experience. Focus on communication and understanding impact of intercultural experience as the basis for social change. (Prereq return from intercultural experience. Limited to 20)

Spring Qtr, ★Sec 1, Th, 6-9, FolH 214

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Spch 3501 INTRODUCTION TO COMMUNICATION RESEARCH METHODS. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Introduction to quantitative research methods in speech-communication, to include design of communication experiments, surveys, interaction coding, content analysis, observational research, and relevant statistical methods. (Prereq 3401. Limited to 100)
Spring Qtr, ★Sec 1, T, 5:45-9:15, NichH 213

Spch 3601 APPROACHES TO PUBLIC DISCOURSE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Survey of theoretical systems intended to explain or direct the creation of public discourse. Traditional rhetorics to contemporary perspectives. Using theory to explain the practice of public discourse. (Prereq 1101. Limited to 100)

Fall Qtr, ★Sec 1, TTh, 4-6, FolH 306, Campbell
(A joint Day/Extension class limited to 20 Extension students)

Winter Qtr, ★Sec 2, T, 6-9, NichH 213

Spring Qtr, ★Sec 3, TTh, 4-6, FolH 306.

Campbell (A joint Day/Extension class limited to 20 Extension students)

Spch 5222 EDUCATIONAL TELEVISION PROGRAMMING AND ADMINISTRATION.

4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Television applied to educational needs; current practices; significant research findings; relative effectiveness of differing types of television utilization; impact of various modes of transmission on programming and administrative concepts. (Prereq 3211 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 4 Extension students)

Winter Qtr, ★Sec 1, MW, 4-6, RarigC 616, Goldstein

Spch 5402 PROBLEMS IN INTERPERSONAL COMMUNICATION.

4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Factors contributing to misunderstanding, not understanding, disagreement, and cessation of contact in dyads. (Prereq 3401 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 4 Extension students)

Spring Qtr, ★Sec 1, MW, 4-6, FolH 318, Shapiro

Spch 5422 INTERVIEWING AND COMMUNICATION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Theory and practice of communication in the information interview. Role of interpersonal perception, empathy, and cognitive structure in dyadic communication. Experience in interviewing and communication analysis. Applications to research in interpersonal and mass communication. (Prereq 1101, 6 cr in social science or #. *Sec 1 may not be taken for graduate credit. Qualified students may register in sec 2 for graduate credit.* Limited to 24)

Fall Qtr, ★Sec 1, W, 6-9, FolH 318, Van Putten
Spring Qtr, ★Sec 2, M, 6-9, FolH 419, Rarick

(See also Rhet 5258, Interviewing: Dynamics of Face-to-Face Communication)

Spch 5441 COMMUNICATION IN HUMAN ORGANIZATIONS.

4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Analysis of functions of communication in organizational settings. Organizational structure and dynamics and their effect upon communication process. Collateral readings and individual projects. (Prereq 3401 or 8 cr in social sciences, 3441 or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 25)

Winter Qtr, ★Sec 1, MW, 4-6, FolH 208, Kroll
(A joint Day/Extension class limited to 4 Extension students)

Spring Qtr, ★Sec 2, W, 6-9, FolH 326, Poole

Statistics (Stat)

(270a Vincent Hall: 625-8046)

College of Liberal Arts

Textbooks for Stat courses on the St. Paul campus are available at Books Underground on the St. Paul campus (624-9200); books for courses on the Minneapolis campus are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also GC 1454, Statistics)

Douglas Hawkins, Professor of Statistics
Kinley Lamtz, Professor of Statistics
Bernard Lindgren, Professor of Statistics
Frank Martin, Associate Professor of Statistics

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Statistics. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Stat 1001 INTRODUCTION TO IDEAS OF STATISTICS. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

Controlled vs observational studies; presentation and description of data; correlation and causality; sampling; accuracy of estimates; tests. (Prereq HS algebra. Limited to 40)

Fall Qtr, ★Sec 1, M, 6:20-8:50, ClaOff B35, StP Campus

Fall Qtr, ★Sec 2, T, 6:20-8:50, McNH 197, StP Campus

Winter Qtr, ★Sec 3, M, 6:20-8:50, ClaOff B35, StP Campus

Winter Qtr, ★Sec 4, T, 6:20-8:50, ClaOff B35, StP Campus

Spring Qtr, ★Sec 5, M, 6:20-8:50, ClaOff B35, StP Campus (Limit 60)

Stat 3011-3012 STATISTICAL METHODS. 4 credits each quarter, tuition* each quarter: Resident \$294; Non-resident \$852.60.

Descriptive statistics; elementary probability; estimation; one- and two-sample tests; correlation; regression; ANOVA; randomized blocks; multiple comparisons; factorial experiments; multiple regression; goodness of fit; nonparametric methods; contingency tables; selected topics. (Prereq college algebra. Limited to 20)

Fall Qtr, 3011, ★Sec 1, W, 6:20-8:50, VinH 211 (Limit 40)

Fall Qtr, 3011, ★Sec 2, Th, 6:20-8:50, VinH 211 (Limit 40)

Winter Qtr, 3011, ★Sec 3, T, 6:20-8:50, AkerH 211 (Limit 50)

Winter Qtr, 3012, ★Sec 1, W, 6:20-8:50, VinH 203

Winter Qtr, 3012, ★Sec 2, Th, 6:20-8:50, VinH 203

Spring Qtr, 3012, ★Sec 3, T, 6:20-8:50, VinH 203

Spring Qtr, 3012, ★Sec 4, W, 6:20-8:50, VinH 203

Stat 3091 INTRODUCTION TO PROBABILITY AND STATISTICS. 4 credits, \$5121, \$5131, tuition*: Resident \$294; Non-resident \$852.60.

Elementary probability and probability distributions, sampling and elements of statistical inference. (Prereq differential and integral calculus. Limited to 60)

Fall Qtr, ★Sec 1, Th, 6:20-8:50, AkerH 225

Winter Qtr, ★Sec 2, Th, 6:20-8:50, AkerH 225

Spring Qtr, ★Sec 3, Th, 6:20-8:50, AkerH 225

Stat 5021 STATISTICAL ANALYSIS I. 5 credits, \$3012, tuition*: Resident \$367.50; Non-resident \$1065.75; Resident Graduate credit \$495; Non-resident Graduate credit \$990; Resident Graduate School credit \$855; Non-resident Graduate School credit \$1710.

Intensive version of 3011-3012, designed primarily for graduate students needing statistics as a research technique. (Prereq college algebra or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Fall Qtr, ★Sec 1, MW, 6-8:15, ClaOff B45, StP Campus

Stat 5301 DESIGNING EXPERIMENTS. 5 credits, \$5163, tuition*: Resident \$367.50; Non-resident \$1065.75; Resident Graduate credit \$495; Non-resident Graduate credit \$990; Resident Graduate School credit \$855; Non-resident Graduate School credit \$1710.

Control of variation, construction, and analysis of complete and incomplete block, split plot, factorial, and other groups of similar experiments. Confounding, crossover, and optimum seeking designs. (Prereq 3012 or 5021 or 5133 or #. Qualified student may register for graduate credit at the University of Minnesota. Limited to 30)

Spring Qtr, ★Sec 1, MW, 6-8:15, ClaOff B30, StP Campus

Stat 5302 APPLIED REGRESSION ANALYSIS. 5 credits, \$5161, tuition*: Resident \$367.50; Non-resident \$1065.75; Resident Graduate credit \$495; Non-resident Graduate credit \$990; Resident Graduate School credit \$855; Non-resident Graduate School credit \$1710.

Simple, multiple, and polynomial regression. Estimation, testing, and prediction. Stepwise and other numerical methods; examination of residuals; weighted least squares; nonlinear models; response surface. Experimental research and economic applications. (Prereq 3012 or 5021 or 5133 or #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Winter Qtr, ★Sec 1, MW, 6-8:15, ClaOff B42, StP Campus

Studio Arts

(See Art)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Student Project for Amity Among Nations (SPAN)

SPAN offers an opportunity for undergraduate and graduate students to pursue their own research in another country and receive academic credit at the University of Minnesota. In the summer of 1994, SPAN students, under the guidance of experienced academic advisers, will travel to either Australia, Ireland, Mexico, or Pakistan. The three-phase SPAN program includes: (1) a year of intensive pre-departure study of a foreign culture (including language when appropriate); (2) a summer abroad (eight weeks minimum) to gather information on an individual project; and (3) the completion of a research paper in the return year. Students are awarded 12 credits for the entire program. Participants are selected a year prior to their summer abroad and enter a nine-month cultural orientation program in the fall. For further information, contact SPAN, 107 Nicholson Hall, University of Minnesota, Minneapolis, MN 55455; (612) 626-1083. Language courses offered by SPAN are listed under Foreign Studies.

Study Abroad

(See page 466)

Study Skills

(See Learning and Academic Skills)

Swedish

(See Scandinavian Languages)

Textiles and Clothing (TexC)

(240 McNeal Hall: 624-9700)

College of Human Ecology

(Department of Design, Housing, and Apparel)

PLEASE NOTE: Beginning Winter Quarter 1994, all TexC courses will be offered as DHA courses. For winter and spring quarter offerings, see the *Design, Housing and Apparel (DHA)* section of this bulletin.

Textbooks for most TexC courses are available at Books Underground on the St. Paul campus (624-9200).

Shari Peterson, Assistant Professor in Textiles and Clothing

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in TexC. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

TexC 3214 (formerly 1643) APPAREL INDUSTRIES. 4 credits, §1643, tuition*: Resident \$330; Non-resident \$957.

Structure, operation, and problems of domestic and foreign apparel industries including ready-to-wear, couture, and auxiliary fashion sector. Interrelationships with the textile industry and distributors. (Prereq Econ 1002 or AgEc 1030)

Fall Qtr, Sec 1, TTh, 6:30-9, McNH 316, StP Campus

TexC 3221 (formerly 3604) PATTERN DEVELOPMENT. 5 credits, §3604, tuition*: Resident \$412.50; Non-resident \$1196.25.

Principles of pattern development, drafting, and draping for apparel design. (Prereq 1602 or 3211, 3217 or 3662. Limited to 20)

Fall Qtr, ★Sec 1, MWF, 3:30-6:30, McNH 205, 212, 216, StP Campus

Theatre Arts (Th)

(208 Middlebrook Hall: 625-6699)

College of Liberal Arts

Textbooks for most Th courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

(See also English; and The Compleat and Practical Scholar noncredit courses)

Barbara Field, Lecturer
Marisha Chamberlain, Lecturer
Kent Neely, Lecturer
James Norwood, Associate Professor

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Theatre Arts. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

Study and Internships in London—Students interested in drama courses and internships will find the Literature and Theatre in London program designed especially for them through the Global Campus. For information, call the Global Campus at 625-3379.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Th 1101 INTRODUCTION TO THE THEATRE. 4 credits, tuition*: Resident \$280; Non-resident \$812. (IS)

History and theory of plays and playwrights. (No prereq. Limited to 60)

Fall Qtr, ★Sec 1, MW, 6-8, BlegH 155, Norwood
Winter Qtr, ★Sec 2, MW, 6-8, BlegH 140, Norwood

Th 1102 DRAMA AND THE MEDIA. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Study of dramatic form in contrasting media: theatre, film, and television. Lectures and film showings. Choice of outside viewing experiences. (No prereq. Limited to 150)

Spring Qtr, ★Sec 1, M, 6:20-8:50, RarigC 190, Neely

Th 1301 ACTING FOR NON-THEATRE MAJORS. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Explores the relationships between acting on the stage and acting in "real life." Emphasis on movement, voice, scene work, daily observations, and improvisations. An introduction to acting through an understanding of our minds, bodies, and naturalism. A class for would-be actors and actresses who might like to take the first step to acting in plays or improving their acting roles in everyday life. (Prereq 1101 or ¶1101. Limited to 30)

Spring Qtr, ★Sec 1, Sa, 9 a.m.-12, RarigC 90

(See also PSch 0851, Creating Effective Presentations: The Performer's Perspective)

Th 1321 BEGINNING ACTING. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Beginning techniques and exercises leading to performance, monologues, and scenes. (Prereq 1101, 1504. Limited to 16)

Spring Qtr, ★Sec 1, Sa, 9 a.m.-12, RarigC 210, Norwood

Th 1805 AMERICAN ETHNIC LITERATURE IN PERFORMANCE. 4 credits, tuition*: Resident \$280; Non-resident \$812.

Reading and analyzing of selected poems, stories, and dramas by Afro-American, American Indian, Asian American, and Chicano writers, and the sharing of insights into a multiracial and multiethnic society through solo and group performances. (No prereq. Limited to 20)

Fall Qtr, ★Sec 1, W, 6:20-8:50, RarigC 616

Winter Qtr, ★Sec 2, W, 6:20-8:50, RarigC 616

Th 3115 INTRODUCTION TO PLAYWRITING. 4 credits, §EngW 3110, tuition*: Resident \$294; Non-resident \$852.60.

Introduction to forms of playwriting. (Prereq #. Sec 1 meets concurrently with EngW 3110. Limited to a combined total of 16)

Fall Qtr, ★Sec 1, T, 6:20-8:50, BlegH 120, Field

Th 3803 PLATFORM PERFORMANCE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Reading and analyzing selected poems, plays, and stories and interpreting literary insights through solo and group performance. (Prereq Management major. Limited to 20)

Winter Qtr, ★Sec 1, T, 6:20-8:50, Rarig 610

Th 5115 ADVANCED PLAYWRITING I. 4 credits, §EngW 5204, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368. (IS)

Advanced playwriting workshop for students with established competence. (Prereq written #. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with EngW 5204. A joint Day/Extension class limited to a combined total of 6 Extension students)

Winter Qtr, ★Sec 1, W, 4:15-6:45, BlegH 150

Th 5950 READING AS PLAYWRIGHTS: CONTEMPORARY DRAMA. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Directed readings in contemporary drama and special assignments for students interested in exploring their potential for playwriting for the theatre of today. (Prereq written Δ. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with EngW 5310, sec 1. A joint Day/Extension class limited to a combined total of 7 Extension students)

Fall Qtr, ★Sec 1, W, 4:15-6:45, LindH 340, Chamberlain

Training and Development

See Vocational Education

University College (UC)

(See the Degrees and Certificates section of this Bulletin)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Urban Affairs

(See Civil Engineering; The Compleat and Practical Scholar noncredit courses; Design; General College; Geography; Industrial Relations; Public Affairs; Public Health; Interdepartmental Study; and Sociology)

Urban Studies (UrbS)

(348 Social Sciences: 626-1626)

College of Liberal Arts

Textbooks for most UrbS courses are available at the Harold D. Smith Bookstore on the West Bank campus (625-3000).

Joint Day/Extension Classes—You may register through Extension for all Urban Studies day school classes, some of which are scheduled after 4 p.m. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

No courses offered through Extension Classes 1993-94.

Veterinary Medicine, College of (CVM)

(455 Veterinary Teaching Hospitals: 624-9227)

Textbooks for most CVM courses are available at Books Underground on the St. Paul campus (624-9200).

Robert A. Robinson, Professor

CVM 3100 PERSPECTIVES: INTERRELATIONSHIPS OF PEOPLE AND ANIMALS IN SOCIETY TODAY. 2 or 3 credits, tuition*: Resident \$245 or \$367.50; Non-resident \$710.50 or \$1065.75. (IS)

Interrelationships of people and animals from several viewpoints. The social, economic, and health consequences of these relationships including issues such as pets and people sharing an urban environment, animal rights, and the influence of differences in cultures on animal-human relationships. (No prereq. Meets concurrently with PubH 3301, 5301. A joint Day/Extension class)

Spring Qtr, ①Sec 1, T, 4-5:40, AnScVM 125, StP Campus, Robinson

Vocabulary Building

(See General College communication skills; and The Practical Scholar noncredit courses)

Vocational and Technical Education

(350 Vocational/Technical Building: 624-1221)

College of Education

(Vocational and Technical Education)

Textbooks for most AgEd, BME, HEEd, Ind, and VoEd courses are available at Books Underground on the St. Paul campus (624-9200).

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in several Vocational Education areas. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

For registration information about day school College of Education courses, see page 148 or call 625-6501.

Some off-campus courses are also available through the department's Office of Special Services. For information, telephone (612) 624-1700.

Contact Vocational and Technical Education to request additional information about course offerings for vocational licensure and degrees in the following programs:

- Agricultural Education
- Business and Marketing Education
- Home Economics Education
- Industrial Education
- Training and Development
- Vocational Education

David Bjorkquist, Professor of Industrial Education/Vocational and Technical Education

James M. Brown, Associate Professor of Industrial Education/Vocational and Technical Education

George Copa, Professor of Agriculture Education/Vocational and Technical Education

Jeanette Daines, Lecturer in Vocational and Technical Education

Charles R. Hopkins, Professor of Business and Marketing Education/Vocational and Technical Education

James C. Kielsmeier, Assistant Professor, Vocational and Technical Education

Richard Krueger, Adjunct Professor in Vocational and Technical Education

Judith Lambrecht, Professor of Business and Marketing Education/Vocational and Technical Education

Gary Leske, Associate Professor of Agriculture Education/Vocational and Technical Education

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Theodore Lewis, Assistant Professor of Industrial Education/Vocational and Technical Education
Jerry McClelland, Associate Professor of Home Economics Education/Vocational and Technical Education

Gary N. McLean, Professor of Business and Marketing Education/Vocational and Technical Education

Jerome Moss, Jr., Professor Emeritus of Industrial Education/Vocational and Technical Education
Gina Nilsen, Teaching Assistant in Vocational and Technical Education

Jane Plihal, Associate Professor of Home Economics Education/Vocational and Technical Education

David Pucel, Professor of Industrial Education/Vocational and Technical Education

Marilyn Rossmann, Associate Professor of Home Economics Education/Vocational and Technical Education

Mary Ann Smith, Assistant Professor in Vocational and Technical Education

James Stone, III, Associate Professor of Business and Marketing Education/Vocational and Technical Education

Richard Swanson, Professor of Industrial Education/Vocational and Technical Education

Ruth Thomas, Associate Professor of Home Economics Education/Vocational and Technical Education

C. S. Turner, Assistant Professor

Business and Marketing Education (BME)
(425 Vocational/Technical Building: 624-3004)

BME 3159 WORD/INFORMATION PROCESSING CONCEPTS AND MANAGEMENT. 3 credits, §BME 5159, tuition*: Resident \$247.50; Non-resident \$717.75.

Personnel and organization in industry; input and output hardware, implementation of word processing systems. **Must be taken A-F.** (No prereq. A joint Day/Extension class limited to 5 Extension students)
Spring Qtr, ★○Sec 1, W, 3:30-6, VoTech 230, StP Campus

BME 3300 TEACHING TYPEWRITING/KEYBOARDING. 3 credits, §BME 5151, tuition*: Resident \$247.50; Non-resident \$717.75.

Objectives, content, methods, materials, and evaluation. **Must be taken A-F.** (Prereq intermediate keyboarding or equivalent, SeEd 3155. A joint Day/Extension class limited to 5 Extension students)
Spring Qtr, ★○Sec 1, T, 3:30-6, VoTech 230, 240, StP Campus, Hopkins

BME 3302 TEACHING BASIC BUSINESS SUBJECTS. 3 credits, §BDE 3302, §BME 5152, tuition*: Resident \$247.50; Non-resident \$717.75.

Developments in content and methods of teaching nonvocational business subjects. **Must be taken A-F.** (Prereq SeEd 3155. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, W, 3:30-6, VoTech 240, StP Campus

BME 3303 TEACHING ACCOUNTING AND DATA PROCESSING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75.

Methods, materials, curriculum, and principles of learning pertinent to accounting and data processing. **Must be taken A-F.** (No prereq. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★○Sec 1, M, 3:30-6, VoTech 230, 240, StP Campus

BME 5151 RESEARCH AND METHODS IN TEACHING TYPEWRITING/KEYBOARDING. 3 credits, §BME 3300, §BDE 5151, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Application of research findings to classroom methodology and materials development. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★○Sec 1, T, 3:30-6, VoTech 230, 240, StP Campus, Hopkins

BME 5152 RESEARCH AND METHODS IN TEACHING THE BASIC BUSINESS SUBJECTS. 3 credits, §BME 3302, §BDE 5152, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Application of research findings to classroom methodology in general business, economics, introduction to business, business law, and consumer education. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, W, 3:30-6, VoTech 240, StP Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

BME 5157 MATERIALS AND METHODS IN OFFICE EDUCATION. 3 credits, §BDE 5157, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Recent research and developments in teaching office procedures, the preparatory and related classes for cooperative office education, and the advising of vocational office education student organizations. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★●Sec 1, T, 4-6:30, VoTech 230, 240, StP Campus

BME 5160 ADVANCED WORD PROCESSING PRACTICUM. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Completion of projects using advanced editing and printing capabilities. **Must be taken A-F.** (Prereq BME 1101 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★●Sec 1, M, 3:30-6, VoTech 230, StP Campus

BME 5162 RESEARCH AND METHODS IN TEACHING ACCOUNTING AND DATA PROCESSING. 4 credits, §BDE 5150, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Application of current research findings to teaching methodology and curriculum and materials development; computerized accounting applications. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★●Sec 1, M, 3:30-6:30, VoTech 230, 240, StP Campus

BME 5252 TEACHING PROMOTION. 3 credits, §BDE 5252, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Identifying materials and methods for teaching visual merchandising, sales promotion, advertising, public

relations, and promotion planning. **Must be taken A-F.** (Prereq #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students) Spring Qtr, ★●Sec 1, Th, 3:30-6, VoTech R285, StP Campus

BME 5253 SUPERVISORY TRAINING. 3 credits, §BDE 5253, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Problems, practices, programs, issues, and methodologies related to preparing trainers of supervisors in business, office, and marketing occupations. **Must be taken A-F.** (Prereq VoEd 5340. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★●Sec 1, T, 4-6:30, VoTech R285, StP Campus

BME 5261 SALES TRAINING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Introduction to strategies and techniques useful in developing effective sales people. **Must be taken A-F.** (Prereq BME 5353, BME 3260. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★●Sec 1, W, 4-6:30, VoTech R285, StP Campus

BME 5262 CUSTOMER SERVICE TRAINING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Overview of customer service strategies used by successful organizations and training practices used to develop customer-oriented personnel. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★●Sec 1, W, 4-6:30, VoTech R285, StP Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

BME 5300 INTRODUCTION TO BUSINESS AND MARKETING EDUCATION CURRICULUM. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Introduction to the conceptual models of marketing and business education useful in the design and delivery of programs in secondary and postsecondary schools, in adult education settings, and in business and industry. **Must be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, M, 3:30-6:50, VoTech 220, StP Campus, Lambrecht

BME 5305 METHODS IN BUSINESS AND MARKETING EDUCATION. 4 credits, §Ind 5360, §BDE 3305, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Practical application of instructional strategies for delivering training and education in business and marketing settings; design and delivery of instructional units focusing on developing business and/or marketing skills. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★○Sec 1, T, 4-6:30, VoTech R280, StP Campus, Lewis

BME 5310 INTRODUCTION TO MICROCOMPUTER APPLICATIONS. 3 credits, §BDE 5310, BME 3310, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Instructional uses of microcomputers, representative business and marketing education applications, including word processing, databases, spreadsheets, and graphics. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, W, 3:30-6, VoTech 230, StP Campus

BME 5330 SPREADSHEET ANALYSIS USING MICROCOMPUTERS IN BUSINESS AND MARKETING EDUCATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Introduction to use of spreadsheet software, instructional applications in business areas. **Must be taken A-F.** (Prereq BME 3310 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★○Sec 1, W, 3:30-6, VoTech 230, StP Campus

BME 5335 TEACHING MICROCOMPUTER BUSINESS GRAPHICS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Representative microcomputer-based business graphics software packages; use for making instructional presentations; use of simulated projects to teach applications in business and marketing classrooms. **Must be taken A-F.** (Prereq BME 3310 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★○Sec 1, T, 3:30-6, VoTech 230, StP Campus

BME 5340 TRENDS AND ISSUES IN BUSINESS AND MARKETING EDUCATION. 3 credits, §BDE 5155, §BDE 5250, §Ind 5305, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Identification, analysis, and discussion of recent issues and trends. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★○Sec 1, T, 4-6:30, VoTech R285, StP Campus, Lewis

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

BME 5345 DATA BASE MICROCOMPUTER APPLICATIONS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Introduction to use of data base software; instructional applications in business areas. **Must be taken A-F.** (Prereq BME 3310 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★○Sec 1, M, 3:30-6, VoTech 230, StP Campus

BME 5353 CURRICULUM CONSTRUCTION IN BUSINESS AND MARKETING EDUCATION. 4 credits, §BDE 5353, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Content identification, program organization, preparation of instructional objectives, guidelines for selection and development of instructional materials. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, W, 6:45-10:05, VoTech 220, StP Campus

BME 5355 ADULT BUSINESS AND MARKETING EDUCATION PROGRAMS. 3 credits, §BDE 5355, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Identifying and training instructors to teach adults in business and marketing classes serving adult clientele in technical colleges, extension programs, community colleges, and private sector training programs; course and program evaluation, planning, and promoting classes. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★○Sec 1, Th, 4-6:30, VoTech 220, StP Campus

BME 5365 INTEGRATED MICROCOMPUTER APPLICATIONS IN BUSINESS AND MARKETING EDUCATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Advanced business and marketing computer applications integrating business word processing, spreadsheets, business graphics, and data base software. **Must be taken A-F.** (Prereq BME 3310, BME 5160, BME 5330, BME 5335, and BME 5345 or equivalent. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★○Sec 1, Th, 4-6:30, VoTech 230, StP Campus, Lambrecht

Home Economics Education (HEED)

(325 Vocational/Technical Building: 624-3010)

HEEd 5001 SPECIAL TOPICS: HOME/SCHOOL COLLABORATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Cooperative approaches to supporting an individual's success in school. Models for collaboration and strategies for developing and strengthening significant partnerships between families, teachers, and administrators in early childhood education programs, K-12 schools, and parent education programs. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, W, 4-6:30, VoTech R380, StP Campus, Rossman

HEEd 5001 SPECIAL TOPICS: HIGHER ORDER THINKING IN EVERYDAY LIFE. 3 credits, §VoEd 5101, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Nature, assessment, and facilitation through educational means of higher levels of cognition in everyday life contexts of family, work, and community. Development and use of knowledge and thinking in such contexts. Theory and educational practices relevant to facilitating learners' higher levels of thinking. **May be taken S-N.** (Prereq upper division teacher education student, graduate student, or practicing teacher. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with VoEd 5101. A joint Day/Extension class limited to a combined total of 5 Extension students)

Winter Qtr, ★○Sec 2, Th, 4-6:30, VoTech R380, StP Campus, Thomas

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

HEEd 5001 SPECIAL TOPICS: CRITICAL PEDAGOGY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Examination of the meaning of critical pedagogy; critique of educational practice in formal and non-formal settings. **Must be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★○Sec 3, Th, 4-6:30, VoTech R375, StP Campus, McClelland

HEEd 5300 HOME ECONOMICS CURRICULUM. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Examination of research and literature; development of units of study and programs at elementary and secondary levels; production and evaluation of materials. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, T, 4-6:30, VoTech R380, StP Campus, Thomas

HEEd 5310 METHODS IN TEACHING HOME ECONOMICS: ATTITUDES, VALUES, AND KNOWLEDGE. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Derivation of theory for educational method from relevant research; application to educational objectives, strategies, and student motivation. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★○Sec 1, W, 4-6:30, VoTech R275, StP Campus, McClelland

HEEd 5315 EVALUATION: THEORETICAL AND TECHNICAL ASPECTS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Collecting and interpreting evidence related to achievement of objectives, emphasizing higher levels of cognition and affective behaviors. **Must be taken**

A-F. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)
Spring Qtr, ★○Sec 1, M, 4-6:30, VoTech R375, StP Campus, Plihal

HEEd 5407 FAMILY LIFE EDUCATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Objectives, content, curriculum development, methods, materials, and evaluation approaches for teaching diverse groups of youth and adults family life concepts including current research in communication, relationships, sexuality, self-esteem, and decision making. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★○Sec 1, T, 4-6:30, VoTech R380, StP Campus, Rossmann

HEEd 5408 EDUCATION FOR WORK-FAMILY RELATIONSHIPS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Examination of interactions between work and family with focus on educational applications for youth and adults. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, Th, 4-6:30, VoTech 220, StP Campus, Stone

Industrial Education (Ind)

(425 Vocational/Technical Building: 624-3004)

Ind 5300 INDUSTRIAL SURVEYS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Practices and techniques for studying instructional needs to establish or improve industrial courses in schools and industry. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★○Sec 1, Th, 4-6:30, VoTech R280, StP Campus, Bjorkquist

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Ind 5301 TESTS IN INDUSTRIAL SUBJECTS.

3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Development, performance evaluations, work attitude evaluations, student progress reporting systems. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Winter Qtr, ○Sec 1, M, 4-6:30, VoTech 220, StP Campus, Pucel

Ind 5303 INSTRUCTIONAL AIDS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Planning, construction, use. **Must be taken A-F.** (Prereq education or grad student. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ○Sec 1, W, 4-6:30, VoTech R250, StP Campus, Nilsen

Ind 5325 FOUNDATIONS OF INDUSTRIAL EDUCATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

History, objectives, development, and current practices of the field. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, Th, 4-6:30, VoTech R280, StP Campus, Lewis

Ind 5330 INDUSTRIAL COURSE CONSTRUCTION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Principles and techniques; experience in planning, organizing, and building a teaching guide. **Must be taken A-F.** (Prereq education or grad student. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Fall Qtr, ○Sec 1, T, 4-6:30, VoTech R280, StP Campus, Pucel

Ind 5344 FACILITIES AND MANAGEMENT.

3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Planning, evaluation, and management of industrial education shop and laboratory facilities. **Must be taken A-F.** (Prereq 1300 or 5330 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ○Sec 1, M, 4-6:30, VoTech R280, StP Campus, Bjorkquist

Ind 5360 INDUSTRIAL INSTRUCTION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Concepts and techniques of instruction in the industrial arts, trade and industrial schools and classes, and training-within-industry programs. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★○Sec 1, W, 4-6:30, VoTech R280, StP Campus, Lewis

Training and Development (VoEd)

A focus is available in training and development (VoEd). The training and development focus prepares professionals to serve in a variety of education, training, and development settings in industry and business. These settings include several types of training (skills and technical, management, sales, international, quality, and motivational) and six specific training and development job roles (instructor, media producer, designer, organization developer, manager, and researcher). For a brochure about the program, contact the Student Information Office, Vocational Education, R350 VoTech Building, University of Minnesota, 1954 Buford Ave., St. Paul, MN 55108; telephone (612) 624-1221; for questions about the program, contact Dr. Gary McLean, Program Coordinator, 420 Vocational and Technical Education Building, University of Minnesota, 1954 Buford Ave., St. Paul, MN 55108 (telephone 624-4901 or 624-3004).

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

Training and Development (VoEd) Courses:

VoEd 5286 MARKETING OF EDUCATION AND TRAINING PROGRAMS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Application of comprehensive marketing model to design and delivery of education and training programs for institutions, programs, and specific course offerings. Market research, market segmentation, product positioning, alternative marketing mix strategies, and marketing planning. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★○Sec 1, M, 4-6:30, VoTech R285, StP Campus, Stone

VoEd 5340 PRINCIPLES OF SUPERVISORY MANAGEMENT. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Introduction to principles of personnel supervision for persons in vocational education, business, industry, or service organizations. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, Th, 6:45-9:15, VoTech R380, Rossmann

VoEd 5750 TRAINING IN INDUSTRY AND BUSINESS. 3 or 4 credits. 4 credits this offering, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Appraisal of training function in industry and business; advancement of competencies in analysis, design, development, delivery, and evaluation of training. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 25)

Fall Qtr, ★Sec 1, M, 6:45-10:05, VoTech R285, StP Campus

Winter Qtr, ★Sec 2, W, 6:45-10:05, VoTech R285, StP Campus

VoEd 5760 ORGANIZATION DEVELOPMENT IN INDUSTRY AND BUSINESS. 3 or 4 credits. 4 credits this offering, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Introduction to major concepts, skills, and techniques. Topics covered include: definition; need; history; diagnosing organizations; intervention theories, techniques, and strategies (individual, team, intergroup, and total organization); change strategies; consulting; and issues. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 25)

Fall Qtr, ★Sec 1, T, 6:45-10:05, VoTech R285, StP Campus

Winter Qtr, ★Sec 2, Th, 6:45-10:05, VoTech R285, StP Campus

VoEd 5762 MANAGEMENT OF CONFLICT. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Types and sources of conflict; diagnosis of conflict styles; skills and strategies for managing interpersonal, intergroup, and intragroup conflict. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, T, 6:45-9:15, VoTech R385, StP Campus, Smith

VoEd 5770 TRAINING AND DEVELOPMENT: CURRENT ISSUES IN TRAINING AND DEVELOPMENT. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Developments related to problems; practices; programs; methodologies in training and development. Focus this offering: Issues currently confronting practitioners in training and organization development, with examination of conflicting viewpoints and resolution options. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, M, 6:45-10:05, VoTech R385, StP Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

VoEd 5770 TRAINING AND DEVELOPMENT: SEMINAR IN HRD. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Developments related to problems; practices; programs; methodologies in training and development. Focus this offering: Personal organization development competencies to enhance skill and knowledge in helping individuals, groups, and organizations achieve excellence. Individual learning contracts and learning experiences will be designed in collaboration with the instructor/other students. In-depth exploration of competency domains may include computers in OD, empowerment, and action research. **May be taken S-N.** (Prereq VoEd 5750 and 5760. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★●Sec 2, M, 6:45-10:05, VoTech R250, StP Campus, Swanson

VoEd 5770 TRAINING AND DEVELOPMENT: HRD APPROACH TO QUALITY THEORIES. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Developments related to problems; practices; programs; methodologies in training and development. This course offering will focus on an examination of leading quality management and productivity improvement concepts from a training and organization development perspective. Specific processes and strategies to implement Juran's, Deming's, and Crosby's concepts will be developed. This is not a statistical process control course. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★●Sec 3, W, 6:45-10:05, VoTech R280, StP Campus

Winter Qtr, ★●Sec 4, T, 6:45-10:05, VoTech R285, StP Campus

VoEd 5770 TRAINING AND DEVELOPMENT: MANAGING TRAINING AND DEVELOPMENT. 1-4 credits. 3 credit this offering, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

A basic overview of managing training and development in industry and business. Emphasis is on training systems, missions, resources, and measures of effectiveness. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★●Sec 5, Th, 4-6:30, VoTech R285, StP Campus

VoEd 5770 TRAINING AND DEVELOPMENT: INTERNATIONAL TRAINING AND DEVELOPMENT. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Developments related to problems; practices; programs; methodologies in training and development. Focus this offering: Training and organization development in industry and business as practiced internationally and in cross-cultural settings. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★●Sec 6, Th, 6:45-10:05, VoTech R285

VoEd 5770 TRAINING AND DEVELOPMENT: USING TEAM BUILDING IN BUSINESS AND INDUSTRY. 1-4 credits. 3 credits this offering, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Developments related to problems; practices; programs; methodologies in training and development. Focus this offering: Introduction to the theory and techniques of building effective work teams. Skills development in facilitating team-building activities. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Spec Term, ★●Sec 7, Sa, Oct. 2, 9, 16, 23, 30, Nov. 6, 8 a.m.-1, VoTech R385, StP Campus

Winter Qtr, ★●Sec 8, M, 6:45-9:15, VoTech R285, StP Campus

Spring Qtr, ★●Sec 9, Th, 6:45-9:15, VoTech R285, StP Campus, Rossmann

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

VoEd 5770 TRAINING AND DEVELOPMENT: MANAGEMENT TRAINING PRACTICES. 1-4 credits. 4 credits this offering, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Developments related to problems; practices; programs, methodologies in training and development. Focus this offering: issues relating to the training of managers, including needed competencies, needs assessment, delivery modes, and evaluation; includes on-site visits and critiques. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr. ★○Sec 10, M, 6:45-10:05, VoTech R385, StP Campus

VoEd 5770 TRAINING AND DEVELOPMENT: MOTIVATIONAL TRAINING. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Developments related to problems; practices; programs, methodologies in training and development. Focus this offering: Current practices of assessing need, planning, delivering, and appraising the results of employee training and development that involve motivational research, theory, and principles. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr. ★○Sec 11, Th, 6:45-10:05, VoTech R385, StP Campus

VoEd 5770 TRAINING AND DEVELOPMENT: COST BENEFIT ANALYSIS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Developments related to problems; practices; programs; methodologies in training and development. This one-credit course will focus on the use of cost benefit analysis for training and development programs in industry and business including the application of forecasting and evaluation models. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Spec Term, ★○Sec 12, Sa, 8 a.m.-1, Jan. 22, 29, Feb. 5, 12, 19, 26, VoTech R385, StP Campus. *No late fee through Jan. 14*

VoEd 5770 TRAINING AND DEVELOPMENT: PRACTICES AND INFLUENCES IN THE NETHERLANDS. 1-4 credits. 4 credits this offering, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Developments related to problems; practices; programs; methodologies in training and development. Focuses on the political, economic, and social factors influencing such practices. Students will travel to the Netherlands as a group for on-site experiences. Students will be responsible for travel costs and expenses in addition to tuition. Dates in the Netherlands: Mar. 19-26, 1994. Contact instructor before Dec. 31, 1993, if you plan to enroll. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 25)

Winter Spec Term, ★Sec 13, Sa, 9 a.m.-12, 1-4 p.m., Feb. 12, Mar. 5, Apr. 16, (3 meetings plus trip to the Netherlands Mar. 19-26), VoTech 425R, StP Campus, Swanson. *No late fee through Feb. 5*

VoEd 5770 TRAINING AND DEVELOPMENT: CONSULTING IN BUSINESS AND INDUSTRY. 1-4 credits. 2 credits this offering, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

Analysis of five elements of the consulting profession in business and industry: marketing, subject matter expertise, organization development, business principles and communication skills; synthesis of the interdependent relationship of the five elements in the consultation process. **May be taken S-N.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Spec Term, ★○Sec 14, Sa, 8 a.m.-12:25, Apr. 9, 16, 23, 30, VoTech R385, StP Campus

VoEd 5780 INTERNSHIP: TRAINING AND DEVELOPMENT. Credits arr (maximum 15 cr), tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Students apply and contract for training and development positions in industry and business; individual contracts describe specific training and development responsibilities to be fulfilled during internship. **May**

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

be taken S-N. (Prereq VoEd 5750. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★●Sec 1, Arr, McLean

Winter Qtr, ★●Sec 2, Arr, Swanson

Spring Qtr, ★●Sec 3, Arr, Rossmann

VoEd 5790 STRATEGIC PLANNING: TRAINING AND DEVELOPMENT. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Human capital as a component of industry and business strategic planning; analysis and articulation of practices. **Must be taken A-F.** (Prereq VoEd 5750 or VoEd 5760. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★●Sec 1, M, 6:45-10:05, VoTech R280, StP Campus, Swanson

Note: Additional VoEd courses follow.

Vocational Education (VoEd)

(R350 Vocational/Technical Building: 624-1221)

VoEd 5100 SPECIAL TOPICS IN INSTRUCTION: SERVICE-LEARNING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Experientially based course for educators interested in integrating service-learning into the school curriculum, co-curricular activities, or youth agencies. Course covers rationale, philosophy, and purposes of service-learning in schools and youth-serving agencies; design, development, and implementation of curriculums and programs in which young people serve their communities; and exploration of learner outcomes and evaluation/assessment of projects. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Winter Qtr, ★●Sec 1, Th, 4-6:30, VoTech R385, StP Campus, Kielsmeier

VoEd 5101 SPECIAL TOPICS: HIGHER ORDER THINKING IN EVERYDAY LIFE. 3 credits, §HEEd 5001, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Nature, assessment, and facilitation through educational means of higher levels of cognition in everyday life contexts of family, work, and community. Development and use of knowledge and thinking in such contexts. Theory and educational practices relevant to facilitating learners' higher levels of thinking. **May be taken S-N.** (Prereq upper division teacher education student, graduate student, or practicing teacher. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with HEEd 5001, sec 2. A joint Day/Extension class limited to a combined total of 5 Extension students)

Winter Qtr, ★●Sec 1, Th, 4-6:30, VoTech R380, StP Campus, Thomas

VoEd 5200 EVALUATION OF LOCAL VOCATIONAL EDUCATION PROGRAMS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Procedures and experience in the use of instruments for conducting program evaluations for teachers, administrators, and state department personnel. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, M, 3:30-6, VoTech R280, StP Campus, Krueger

VoEd 5274 TWO-YEAR POSTSECONDARY INSTITUTIONS. 3 credits, §EdAd 5274, §EdPA 5274, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Present status, development, functions, organization, curriculum, and trends in postsecondary but nonbaccalaureate institutions. (Prereq written#. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with EdPA 5274. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★●Sec 1, T, 4-6:30, PeikH 225, Turner

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

VoEd 5300 PHILOSOPHY AND PRACTICE OF VOCATIONAL EDUCATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Interpretation of the purposes of vocational education in varying socioeconomic contexts; analysis of vocational fields in regard to recipients, practices, legislation, and funding. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, M, 4-6:30, VoTech R285, StP Campus, Bjorkquist

VoEd 5310 ADVISING VOCATIONAL STUDENT ORGANIZATIONS. 2 credits, tuition*: Resident \$165; Non-resident \$478.50; Resident Graduate credit \$198; Non-resident Graduate credit \$396; Resident Graduate School credit \$342; Non-resident Graduate School credit \$684.

The value and purposes of vocational student organizations in the curriculum. Tasks of the advisor in designing, operating, and sustaining activities to enhance student leadership, personal development, and school-to-work transition. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★○Sec 1, Th, 3:30-5:10, VoTech R250, StP Campus

VoEd 5330 COORDINATION TECHNIQUES IN COOPERATIVE EDUCATION. 3 credits, §BME 5352, §HEEd 5106, §Ind 5310, §AgEd 5071, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Responsibilities of instructor-coordinator; guidance, selection, placement, supervision, and evaluation of students; articulation of related instruction; training sponsor identification, orientation, development, and evaluation; purposes and management of the program. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★○Sec 1, Th, 4-6:30, VoTech R385, StP Campus, Leske

VoEd 5340 PRINCIPLES OF SUPERVISORY MANAGEMENT. See page 352 for course description and meeting times.

VoEd 5400 EDUCATION FOR WORK. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Examination of contextual bases underlying education for work; implications for practice. **Must be taken A-F.** (Prereq VoEd 5300 or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, T, 4-6:30, VoTech R285, StP Campus, Bjorkquist

VoEd 5500 INTRODUCTION TO VOCATIONAL EDUCATION ADMINISTRATION. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Basic concepts of structure, financing, program planning and evaluation, law and liability, personnel policies, and the management of vocational education programs. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class)

Spring Qtr, ○Sec 1, M, 4-6:30, VoTech 220, StP Campus, Daines

VoEd 5800 WORKING WITH SPECIAL NEEDS STUDENTS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Designed to help vocational instructors identify instruction for disadvantaged and handicapped students within regular classroom/laboratory settings. **Must be taken A-F.** (No prereq. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Spring Qtr, ★○Sec 1, T, 4-6:30, VoTech R385, StP Campus, Brown

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

VoEd 5900 USING VOCATIONAL EDUCATION RESEARCH. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

An introduction to the role of vocational education research in professional practice, significant problems of practice for research, alternative modes of research, and synthesis and application of the results of research. **Must be taken A-F.** (Prereq VoEd grad student or #. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 5 Extension students)

Fall Qtr, ★○Sec 1, T, 6:45-9:15, VoTech R280, StP Campus, Leske

Winter Qtr, ★○Sec 2, T, 4-6:30, VoTech R385, StP Campus, Leske

Women's Studies (WoSt)

(492 Ford Hall: 624-6006)

College of Liberal Arts

Textbooks for most WoSt courses are available at the Minnesota Book Center in Williamson Hall (625-6000).

(See also Psychology; English; and The Compleat and Practical Scholar noncredit courses)

Anne Basting, Teaching Assistant
 Maria Calderon, Lecturer in Chicano Studies
 Sharon Doherty, Teaching Assistant
 Patricia Faunce, Professor
 Susan Geiger, Associate Professor
 Amy Ihlan, Teaching Assistant
 Mary Jo Kane, Associate Professor of Kinesiology
 Judith Katz, Lecturer
 April Knutson, Lecturer
 Barbara Loeb, Dance Specialist
 Dorothy Loeffler, Associate Professor of Educational Psychology
 Carol Mason, Teaching Assistant
 Patricia Mullen, Director, Office of Equal Opportunity and Affirmative Action
 Pamela Olano, Teaching Assistant
 Jane Olmsted, Teaching Assistant
 Anne Phibbs, Teaching Assistant
 Nancy Potter, Teaching Assistant
 Laura Schere, Teaching Assistant
 Kim Surkan, Teaching Assistant
 Mari Trine, Teaching Assistant
 Sharon Rice Vaughan, Lecturer
 Jacquelyn Zita, Associate Professor

(For related courses of interest, also see the following departments in this Bulletin: Architecture; English; Family Social Science; General College; History; Humanities; The Compleat and Practical Scholar noncredit courses; Psychology; Rhetoric; Social Work; Sociology)

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in Women's Studies. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

International Internships and Study Abroad—Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

A minor is available in Women's Studies. Interested students should call CEE Counseling, 625-2500, for details.

Continuing Education for Women (CEW) sections available in the following courses: WoSt 1001, 3205, 3304, 3309, 5205

WoSt 1001 INTRO TO WOMEN'S STUDIES. 4 credits, tuition*: Resident \$280; Non-resident \$812. Overview of issues related to the current and rapidly changing role and status of women. (No prereq. Limited to 40)

Winter Qtr, ★Sec 1, W, 9:30 a.m.-12, MacP, Trine.
Offered through Continuing Education for Women

WoSt 1003 WOMEN IN WORLD CULTURES. 4 credits, tuition*: Resident \$280; Non-resident \$812.

The lives of women in non-Western societies including their economic, political, and social contributions, familial roles, and status in society. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, W, 4:30-7, FordH 155

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

WoSt 3100 TOPICS IN FEMINIST THOUGHT, THEORY, AND METHODS: FEMINISTS THEORIZE THE FAMILY. 4 credits (max 12 cr), tuition*: Resident \$294; Non-resident \$852.60.

Explorations of the "family" and "family values" from a feminist perspective. Gender roles, maternal instinct, role models for children, responsibilities of government, racism and the black family, class and family structures. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, M, 6:20-8:50, FordH 160, Phibbs

WoSt 3100 TOPICS IN FEMINIST THOUGHT, THEORY, AND METHODS: The Significance of Anita Hill. 4 credits (max 12 cr), tuition*: Resident \$294; Non-resident \$852.60.

Analysis of Senate confirmation hearings on the appointment of Clarence Thomas to the U.S. Supreme Court and the dramatic testimony of Anita Hill. Study of subsequent scholarship on the significance of Anita Hill with special attention to issues of class, gender, race, and sexuality. (No prereq. Meets concurrently with WoSt 5100. Limited to a combined total of 40)

Winter Qtr, ★Sec 2, W, 6:20-8:50, FordH 285, Zita

WoSt 3100 TOPICS IN FEMINIST THOUGHT, THEORY, AND METHODS: FEMINISM AND ECOLOGY. 4 credits (max 12 cr), tuition*: Resident \$294; Non-resident \$852.60.

Intersection between the domination of women and the degradation of nature, with particular focus on attempts to articulate a politics of resistance from the standpoint of ecofeminism. Historical and theoretical foundations of ecofeminism and its debates. (No prereq. Limited to 40)

Spring Qtr, ★Sec 3, T, 6:20-8:50, FordH 120, Schere

WoSt 3200 TOPICS IN WOMEN'S BIOLOGY, PSYCHOLOGY, AND SEXUALITY: SPORT AND GENDER. 4 credits (max 12 cr), tuition*: Resident \$294; Non-resident \$852.60.

Women's involvement in and contributions to sport and physical activity. Particular attention to the social construction of the female athlete and her body in ways that emphasize her "otherness." Focus on issues of race, class, and sexual orientation. (No prereq. Meets concurrently with 5200. Limited to a combined total of 40)

Winter Qtr, ★Sec 1, W, 4-6:30, FordH 130, Kane

WoSt 3202 (formerly 3001) BIOLOGY OF WOMEN. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Physiology, anatomy, and endocrine chemistry relevant to women's life cycles and reproductive functioning. (Prereq Biol 1009 or Phsl 1001 or #. A joint Day/Extension class limited to 40 Extension students)

Winter Qtr, ★Sec 1, M, 6:20-8:50, FordH 155, Zita

WoSt 3204 (formerly 3005) SEXUALITY AND SELF-IMAGE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Explores basic ideas about sexuality and intimacy such as gender and sexual identity; origin of ideas about "female sexuality"; roles of racial, ethnic, and other stereotypes in the regulation of sexuality; categories of human sexuality and their functions. Also considers eroticism, homophobia, sexual violence, pornography, romance, and desire. (Prereq 1001, 1002, 1003 or #. Limited to 40)

Fall Qtr, ★Sec 1, W, 6:20-8:50, FordH 160, Potter

WoSt 3205 (formerly 3301) WOMAN: A SENSE OF IDENTITY. 4 credits, \$5205, tuition*: Resident \$294; Non-resident \$852.60.

Exploration of social and psychological factors which inhibit or enhance a woman's continuously developing sense of identity. Learning who you are, what you want, and how to take appropriate action. Exercises in power, body image, goal setting, and assertion skills in difficult situations. Journal writing, small-group work, and a project are part of the class requirements. Students are expected to attend all class sessions. Students will not be admitted after the first class meeting. *All sections offered through Continuing Education for Women.* (No prereq. No auditors. Meets concurrently with 5205. Limited to a combined total of 40)

Fall Qtr, ★Sec 1, T, 6:10-9:10, Armory 202, Loeffler

Fall Qtr, ★Sec 2, Th, 1:15-4:15, Armory 202, Loeffler

Winter Qtr, ★Sec 3, T, 6:10-9:10, Armory 202, Loeffler

Winter Qtr, ★Sec 4, Th, 1:15-4:15, Armory 202, Loeffler

Spring Qtr, ★Sec 5, T, 6:10-9:10, Armory 202, Loeffler

Spring Qtr, ★Sec 6, Th, 1:15-4:15, Armory 202, Loeffler

WoSt 3300 TOPICS IN WOMEN IN LITERATURE AND THE ARTS: CONTEMPORARY AMERICAN WOMEN'S FILM AND LITERATURE. 4 credits (12 cr max), tuition*: Resident \$294; Non-resident \$852.60.

Using film and literary texts, course examines how cultural differences account for varied perspectives on rape, child abuse, sexual identity, personal and collective memory, economic oppression, and political resistance. (No prereq. Limited to 40)

Winter Qtr, ★Sec 1, M, 6:20-8:50, LindH 320, Mason

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

WoSt 3300 TOPICS IN WOMEN IN LITERATURE AND THE ARTS: OLDER WOMEN AND THE ARTS. 4 credits (max 12 cr), tuition*: Resident \$294; Non-resident \$852.60.

Images of aging women in the arts. Differences between the perspectives of older and younger women artists; the representation of aging along the axes of race, class, and sexuality; images of aging as they reflect current social conditions, how the arts can better represent the issues and conditions of aging. (No prereq. Limited to 40)

Spring Qtr, ★Sec 2, M, 6:20-8:50, FordH 160, Basting

WoSt 3304 WOMEN AND THE ARTS: DANCE AND THE PERFORMING ARTS FROM MARTHA TO MADONNA. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Examination of several performing arts forms from a feminist perspective: dance, theater, vocal groups, and performance acts. Topics include women as creative artists, as object/subject of the arts, and the nature of women's art. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, M, 9:30 a.m.-12, MacP, Loeb.

Offered through Continuing Education for Women

WoSt 3305 WOMEN AND LANGUAGE. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

An investigation of the ways in which language privileges dominant race, class, and gender positions, and how women writers of diverse socioeconomic and cultural backgrounds use language against these biases. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, M, 6:20-8:50, FordH 170, Surkan

WoSt 3309 CONTEMPORARY WOMEN'S SHORT FICTION. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

The importance of imagination and memory, the survival of soul and body in the face of violence and degradation, the role of the spirit in transformation, and the shifting realities of right and wrong as expressed through women's short fiction. (No prereq. Limited to 40)

Spring Qtr, ★Sec 1, Th, 9:30 a.m.-12, MacP,

Olmsted. Offered through Continuing Education for Women

WoSt 3400 TOPICS IN COMPARATIVE STUDY OF WOMEN: HISPANIC WOMEN IN THE U.S. 4 credits (max 12 cr), tuition*: Resident \$294; Non-resident \$852.60.

Hispanic women in the labor market, education, family, and work. (No prereq. Meets concurrently with Chic 3330. Limited to 20)

Fall Qtr, ★Sec 1, T, 6:20-8:50, FordH 40, Calderon

WoSt 3400 TOPICS IN COMPARATIVE STUDY OF WOMEN: OUT IN THE WORLD: A Comparative Look at Multicultural Lesbian and Gay Studies. 4 credits (max 12 cr), tuition*: Resident \$294; Non-resident \$852.60.

Lesbian and gay lifestyles and experiences outside United States, and multicultural lesbian and gay experiences within U. S.; lesbian and gay identities as influenced by politics, race, class, history, and culture. (No prereq. Limited to 40)

Winter Qtr, ★Sec 2, Th, 4-6:30, FordH 150, Olano

WoSt 3400 TOPICS IN COMPARATIVE STUDY OF WOMEN: BATTERED WOMEN: A Social and Historical Perspective. 4 credits (max 12 cr), tuition*: Resident \$294; Non-resident \$852.60.

Relationship between violence against women and society; how battering maintains power and control in intimate relationships; its occurrence among people of different races, economic statuses, classes, sexualities, ages, and abilities. Economic, moral, social, and legal issues surrounding battering. (No prereq. Limited to 40)

Spring Qtr, ★Sec 3, W, 6:20-8:50, FordH 40, Vaughan

WoSt 3403 JEWISH WOMEN IN THE UNITED STATES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Roles, stereotypes, media images, political struggles, art and literature of Jewish women in the U.S. from the mid-19th century to the present. (No prereq. Limited to 40)

Fall Qtr, ★Sec 1, Th, 6:20-8:50, FordH 170, Katz

WoSt 3500 TOPICS IN WOMEN, PUBLIC POLICY, AND THE LAW: WOMEN AND COMMUNITY ORGANIZING. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Explores definitions and traditions of community organizing in the U.S., women as organizers and organized, and issues of diversity and common cause. Students will analyze power in organizations and study organizing in such varied settings as unions; civil rights, farm, and welfare rights movements; and multicultural women's alliances. (No prereq. Limited to 40)

Spring Qtr, ★Sec 1, Th, 6:20-8:50, FordH 160, Doherty, Mullen

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

WoSt 5100 TOPICS IN FEMINIST THOUGHT, THEORY, AND METHODS: The Significance of Anita Hill. 4 credits (max 12 cr), tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See description for WoSt 3100 sec 2. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with WoSt 3100 sec 2. Limited to a combined total of 40) Winter Qtr, ★Sec 1, W, 6:20-8:50, FordH 285, Zita

WoSt 5200 TOPICS IN WOMEN'S BIOLOGY, PSYCHOLOGY, AND SEXUALITY: SPORT AND GENDER. 4 credits (max 12 cr), tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See description for WoSt 3200. (No prereq. Meets concurrently with 3200. Qualified students may register for graduate credit at the University of Minnesota. Limited to a combined total of 40)

Winter Qtr, ★Sec 1, W, 4-6:30, FordH 130, Kane

WoSt 5202 FEMINIST THERAPIES. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Sexism in theoretical views of women and therapy; emerging views of alternative therapeutic approaches for women. Resources include feminist behavioral/social sciences research and literature; biographies, essays, and cases regarding women's lives; community resource persons. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Winter Qtr, ★Sec 1, T, 5:30-8, FordH 150, Faunce

WoSt 5205 (formerly 5301) WOMAN: A SENSE OF IDENTITY. 4 credits, tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

See description for 3205. Students are expected to attend all class sessions. Students will not be admitted after the first class meeting. *All sections offered through Continuing Education for Women.* (No prereq. No auditors. Qualified students may register for graduate credit at the University of Minnesota. Meets concurrently with 3205. Limited to a combined total of 40)

Fall Qtr, ★Sec 1, T, 6:10-9:10, Armory 202, Loeffler

Fall Qtr, ★Sec 2, Th, 1:15-4:15, Armory 202, Loeffler

Winter Qtr, ★Sec 3, T, 6:10-9:10, Armory 202, Loeffler

Winter Qtr, ★Sec 4, Th, 1:15-4:15, Armory 202, Loeffler

Spring Qtr, ★Sec 5, T, 6:10-9:10, Armory 202, Loeffler

Spring Qtr, ★Sec 6, Th, 1:15-4:15, Armory 202, Loeffler

WoSt 5300 TOPICS IN WOMEN IN LITERATURE AND THE ARTS: EMERGING LITERATURES: Women Writing Colonial Oppression and Postcolonial Struggles for Equality. 4 credits (max 12 cr), tuition*: Resident \$294; Non-resident \$852.60; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Autobiographical and fictional accounts written by women of former colonies about the economic, political, and cultural oppression they suffer under colonialism, and their continuing struggles for equality in the postcolonial era. (No prereq. Qualified students may register for graduate credit at the University of Minnesota. Limited to 40)

Spring Qtr, ★Sec 1, W, 6:20-8:50, FordH 160, Knutson

WoSt 5501 WOMEN AND THE LAW. 4 credits, tuition*: Resident \$294; Non-resident \$852.60.

Relationship between women and "the law" in theory and in practice. Feminist legal arguments based on traditional legal concepts of equality and rights, the emerging feminist critique of this strategy. The impact the tensions of feminist jurisprudence may have on legal method and procedure. (No prereq. May not be taken for graduate credit at the University of Minnesota. Limited to 40)

Spring Qtr, ★Sec 1, M, 6:20-8:50, FordH 130, Ihlan

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Youth Studies (YoSt)

(386 McNeal Hall: 624-3700)

College of Human Ecology**(School of Social Work)**

Textbooks for most YoSt courses are available at Books Underground on the St. Paul campus (624-9200).

(See also Anth 5920, Topics in Anthropology; Anthropology of AIDS; Education; Family Social Science; PubH 5010, Public Health Approach to AIDS; and Social Work)

Michael Baizerman, Professor
 Jerome Beker, Professor
 Mary K. Burnison, Instructor
 F. B. Rick Hebert, Visiting Professor
 Jack Kirkland, Visiting Lecturer
 Ira M. Lourie, Visiting Professor
 Jan Mandell, Lecturer
 Diane Olson, Lecturer
 Penny Parry, Visiting Professor
 Jerry Stein, Lecturer

International Internships and Study Abroad—

Internships and directed study are arranged in Ecuador, India, Jamaica, Kenya, Morocco, and Senegal through Minnesota Studies in International Development (MSID) for juniors, seniors, graduates, and professionals in many fields. Call 626-2234 or stop by the Global Campus office in 106 Nicholson Hall for more information.

Joint Day/Extension Classes—You may register through Extension for certain day school classes scheduled before 4 p.m. in YoSt. For a copy of the current daytime Class Schedule and procedures for registration through Extension, call 624-2388 two weeks before mail registration for that quarter begins.

YoSt 3100 INTRODUCTION TO YOUTH WORK. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75.

Exploration of settings in which youth work is done—schools, informal education, juvenile justice, mental and physical health organizations, religious organizations. Key issues, policy and programmatic responses; philosophy, values, roles, tasks of youth worker, and career patterns. (Prereq #: Limited to 20)

Winter Qtr, ★Sec 1, MW, 3:15-4:30, McNH 386A, StP Campus

YoSt 5100 YOUTH IN THE WORLD. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Encourages critical thinking about how youth as idea and as lived reality are understood in scholarship, public discourse, and professional practice. The larger frame includes building a basis for understanding youth, working with youth or on behalf of youth. (Prereq YoSt 5330 or CPsy 3303. Qualified students may register for graduate credit at the University of Minnesota. A joint Day/Extension class limited to 20 Extension students)

Fall Qtr, ★Sec 1, M, 3-6, McNH 376, StP Campus, Baizerman

YoSt 5120 INDEPENDENT STUDY IN YOUTH STUDIES. Cr arr. (maximum 12 cr), tuition* each credit: Resident \$82.50; Non-resident \$239.25; Resident Graduate credit \$99; Non-resident Graduate credit \$198; Resident Graduate School credit \$171; Non-resident Graduate School credit \$342.

Independent reading and/or research under faculty supervision. **No late fees for Independent Study.** (Prereq #: Qualified students may register for graduate credit at the University of Minnesota)

Fall Qtr, Sec 1, Arr, Baizerman, Beker, Burnison, staff

Winter Qtr, Sec 2, Arr, Baizerman, Beker, Burnison, staff

Spring Qtr, Sec 3, Arr, Baizerman, Beker, Burnison, staff

YoSt 5130 SPECIAL TOPICS: EXPERIENTIAL EDUCATION FOR CITIZEN DEVELOPMENT: National Youth Service. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Examination of rationale and program designs for involving young adults in hands-on community service programming comparable in philosophy to the Civilian Conservation Corps and the Peace Corps. A focus on within-school, community service learning models. One-day outdoor practicum experience on Saturday. (Prereq 6 cr in social sciences, experience in youth work, and #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Winter Spec Term, ★Sec 1, FSaM, 8:30 a.m.-4:30, Feb. 4, 5, Mar. 5, 1994, McNH 386A, StP Campus. *No late fee through Jan. 28*

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

YoSt 5130 SPECIAL TOPICS; EXPERIENTIAL LEARNING: Theatre Activities in Youth Work and Education. 3 credits, tuition* (includes \$15 course fee): Resident \$262.50; Non-resident \$732.75; Resident Graduate credit \$312; Non-resident Graduate credit \$609; Resident Graduate School credit \$528; Non-resident Graduate School credit \$1041.

Empowering methods of personal/creative development using experiential learning and theatre activities to enhance creativity and imagination of youth workers and educators. A seminar that examines new approaches to working with youth in school and youth agency settings, combined with application of experiential learning and improvisational theatre theory and praxis. Three full days. One-day practicum experience with high school students. (Prereq 6 cr in social sciences, experience in youth work or teaching, and #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Spring Spec Term, ★Sec 2, FSa, 8:30 a.m.-4:30, Apr. 1, 2, May 14, 1994, McNH 386A, StP Campus, Mandell. *No late fee through Mar. 25*

YoSt 5130 SPECIAL TOPICS; PERSONAL DEVELOPMENT AND EXPERIENTIAL EDUCATION: High Intensity Outdoor Adventure. 3 credits, tuition* (includes \$25 course fee): Resident \$272.50; Non-resident \$742.75; Resident Graduate credit \$322; Non-resident Graduate credit \$619; Resident Graduate School credit \$538; Non-resident Graduate School credit \$1051.

Empowering methods of personal development using challenging, high-risk outdoor methods are examined. Emphasis on historical and theoretical roots and program designs, including Outward Bound; leadership training. One-day outdoor practicum experience on Saturday. (Prereq 6 cr in social sciences, experience in youth work, and #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 18)

Spring Spec Term, ★Sec 3, FSaM, 8 a.m.-4:30, Apr. 22, 23, 25, 1994, McNH 386A, StP Campus. *No late fee through Apr. 15*

YoSt 5132 EXPERIENTIAL LEARNING. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Course will cover (1) rationale for and purposes of experiential learning in schools and youth-serving agencies, (2) development and implementation of experiential programs for adolescents, and (3) evaluation of experiential-learning programs. Each student will develop a plan for an experiential program for

teenagers. (Prereq CPsy 3303 or YoSt 5330 and #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Spring Spec Term, ★Sec 1, FSaM, 8:30 a.m.-4:30, May 6, 7, June 4, 1994, McNH 386, StP Campus, Burnison. *No late fee through Apr. 29.*

YoSt 5201 YOUTH WORK PRACTICE: INTERNSHIP AND SEMINAR. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Two-hour seminar and 16 hours of fieldwork each week. Students reflect on and integrate knowledge about youth with ongoing experience in work with youth. (Prereq Soc 1001, Psy 1001, YoSt 5330 and #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 15)

Fall Qtr, ★Sec 1, T, 3:30-5:30, McNH 386A, StP Campus, Burnison

YoSt 5202 YOUTH WORK PRACTICE: INTERNSHIP AND SEMINAR. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Two-hour seminar and 16 hours of fieldwork each week. Students reflect on and integrate knowledge about youth with ongoing experience in work with youth. (Prereq YoSt 5201 and #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 15)

Winter Qtr, ★Sec 1, T, 3:30-5:30, McNH 386A, StP Campus, Burnison

YoSt 5203 YOUTH WORK PRACTICE: INTERNSHIP AND SEMINAR. 4 credits, tuition*: Resident \$330; Non-resident \$957; Resident Graduate credit \$396; Non-resident Graduate credit \$792; Resident Graduate School credit \$684; Non-resident Graduate School credit \$1368.

Two-hour seminar and 16 hours of fieldwork each week. Students reflect on and integrate knowledge about youth with ongoing experience in work with youth. (Prereq Soc 1001, Psy 1001, YoSt 5330 and #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 15)

Fall Qtr, ★Sec 1, W, Arr, McNH 386A, StP Campus, Burnison

Spring Qtr, ★Sec 2, Th, 3:30-5:30, McNH 386A, StP Campus, Burnison

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

YoSt 5230 WORK WITH YOUTH—INDIVIDUAL. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Examination of basic assumptions underlying work with youth. Emphasis on how adolescents, in particular, learn to get along with themselves. Attention to special issues and concerns of adolescents and of persons who work with them. This first course in a three-quarter sequence will emphasize work on a one-to-one basis. Class meets three full days. (Prereq Soc 1001, Psy 1001, CPsy 3303, and #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Fall Spec Term, ★Sec 1, FSaM, 8:30 a.m.-4:30, Oct. 1, 2, 4, 1993, McNH 386A, StP Campus, Hebert. *No late fee through Sept. 24*

Spring Spec Term, ★Sec 2, FSaM, 8:30 a.m.-4:30, Apr. 8, 9, 11, 1994, McNH 386A, StP Campus, Hebert. *No late fee through Apr. 1*

YoSt 5231 WORK WITH YOUTH—FAMILIES. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Theories and techniques of therapy with adolescents and their families. Emphasis on practical methods of structural change; developing effective communication, decision-making, and problem-solving systems; winning the family's cooperation; and the role of the therapist in family therapy. Class meets three full days. (Prereq 5230, FSoS 5200, and #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Fall Spec Term, ★Sec 1, FSaM, 8:30 a.m.-4:30, Nov. 12, 13, 15, 1993, McNH 386A, StP Campus, Lourie. *No late fee through Nov. 5*

Spring Spec Term, ★Sec 2, FSaM, 8:30 a.m.-4:30, May 13, 14, 16, 1994, McNH 386A, StP Campus, Lourie. *No late fee through May 6*

YoSt 5232 WORK WITH YOUTH—GROUPS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

The purpose of this course is to help practitioners with adolescents to: 1) increase their knowledge and understanding of adolescent group needs and associations; 2) increase knowledge of group process; and 3) enhance skill in working with groups of adolescents in the community, in group living situations, and in

group therapy. Class meets three full days. (Prereq 5230 and #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Winter Spec Term, ★Sec 1, FSaM, 8:30 a.m.-4:30, Jan. 21, 22, 24, 1994, McNH 386A, StP Campus, Kirkland. *No late fee through Jan. 14*

Spring Spec Term, ★Sec 2, FSaM, 8:30 a.m.-4:30, Apr. 29, 30, May 2, 1994, McNH 386A, StP Campus, Parry. *No late fee through Apr. 22*

YoSt 5330 CHILD AND ADOLESCENT PSYCHOLOGY FOR PRACTITIONERS. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Course includes application of theory and research about children and adolescents, including how findings can be used and how theories facilitate understanding of behavior. (Prereq courses in educational psychology, child or adolescent psychology. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Fall Qtr, ★Sec 1, W, 4:30-7, McNH 33, StP Campus, Olson

YoSt 5331 YOUTH AGENCIES, ORGANIZATIONS AND YOUTH SERVICE SYSTEM. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Overview of major forms of youth agencies and organizations, sources of agency legitimacy, ideologies and values, goals. Relations between and among agencies and organizations. Roles of adults and youth; professionals and nonprofessionals; paid staff and volunteers; youth participation; legal and ethical issues. Examples of existing and ideal agencies, excluding schools. (Prereq two courses in sociology/anthropology and work experience in a youth agency or organization. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Winter Qtr, ★Sec 1, Th, 6:30-9, McNH 386A, StP Campus, Stein

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Course Descriptions

YoSt 5401 COMMUNICATING WITH ADOLESCENTS ABOUT SEXUALITY. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Sexual development and experience, emphasizing how adults can be comfortable to communicate more effectively with young people. Sexual patterns, variations, roles, power, exploration, sex education. (Prereq 6 cr social sciences, experience working with youth and #. Qualified students may register for graduate credit at the University of Minnesota. Limited to 30)

Fall Qtr, ★Sec 1, Th, 4:30-7, McNH 146, StP
Campus

YoSt 5711 INTRODUCTION TO CONSULTATION IN YOUTH WORK. 3 credits, tuition*: Resident \$247.50; Non-resident \$717.75; Resident Graduate credit \$297; Non-resident Graduate credit \$594; Resident Graduate School credit \$513; Non-resident Graduate School credit \$1026.

Major conceptual models for understanding consultation; their use in analyzing program development, research, program evaluation, and clinical cases. Role of consultant and consultee; ethical issues in consultation. Does not focus on how to do consultation. (Prereq at least two courses in sociology and/or anthropology, major in human services profession, paid or voluntary experience in youth or other human services organization. Qualified students may register for graduate credit at the University of Minnesota. Limited to 20)

Spring Qtr, ★Sec 1, M, 4-6:30, McNH 386A, StP
Campus

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

* Tuition definitions of Resident and Non-resident explained on page 22.

Continuing Education for Women (CEW)

Telephone 624-5267 for more information.

Noncredit Courses

The University of Minnesota has a long history of involvement in women's education. Continuing Education for Women continues this tradition by offering quality, innovative, and timely programs using University resources. As part of the Compleat Scholar (CSch) and Practical Scholar (PSch) curriculum, CEW regularly offers noncredit courses to meet women's needs and interests in an ever-changing society.

Credit Courses

Credit classes meet once a week, usually during the day, at off-campus locations. Course content and materials, work expected of students, and responsibilities of instructors are determined by the academic discipline granting the credit. Courses are expected to have the integrity and legitimacy of campus-based day classes for equivalent credit.

The following list of credit classes offered through CEW during the academic year are grouped by quarter. For complete course descriptions and prerequisites, refer to the individual department listings. For example, for Psy 3201, refer to Psychology and the CEW section number. Credit classes begin on page 54.

For registration procedures, dates, and locations, see the When and How to Register section of this Bulletin. Credit classes begin the first week of the term, and follow regular late fee dates.

Fall Quarter 1993:

AmSt 1001	Sec 2	American Culture I: Origins Through Mid-19th Century
ArtH 3152	Sec 1	Greek Art and Archaeology
Clas 3152	Sec 1	Greek Art and Archaeology
CSCL 1301	Sec 1	Discourse and Society
Comp 1011	Sec 4	Writing Practice I
Engl 3412	Sec 1	Survey of American Literature (1850-1900)
Ital 1101	Sec 2	Beginning Italian
Jour 1001	Sec 1	Introduction to Mass Communication
Phil 1003	Sec 1	Ethics
Psy 3201	Sec 1	Introduction to Social Psychology
WoSt 3205	Sec 1, 2	Woman: A Sense of Identity
WoSt 3304	Sec 1	Women and the Arts: Dance and the Performing Arts From Martha to Madonna
WoSt 5205	Sec 1, 2	Woman: A Sense of Identity

Winter Quarter 1994:

Anth 1102	Sec 2	Introduction to Social and Cultural Anthropology
Engl 3851	Sec 2	The English Language
Hist 1307	Sec 1	American History
Ital 1102	Sec 2	Beginning Italian
Math 1111	Sec 12	College Algebra and Analytic Geometry
Soc 3501	Sec 1	The Family System
Spch 3431	Sec 2	The Role of Persuasion in the Modern World
WoSt 1001	Sec 2	Introduction to Women's Studies
WoSt 3205	Sec 3, 4	Woman: A Sense of Identity
WoSt 5205	Sec 3, 4	Woman: A Sense of Identity

Spring Quarter 1994:

ArtH 3035	Sec 1	Mythology in Western Art
Clas 1042	Sec 2	Greek and Roman Mythology
Clas 3035	Sec 1	Mythology in Western Art
Engl 3455	Sec 2	American Short Story
GC 1551	Sec 2	Marketing: Introduction
Ital 1103	Sec 2	Beginning Italian
Math 1211	Sec 13	Calculus I
PBio 1012	Sec 2	Plants Useful to Humans
Pol 1025	Sec 2	World Politics
Psy 3101	Sec 2	Introduction to Personality
WoSt 3205	Sec 5, 6	Woman: A Sense of Identity
WoSt 3309	Sec 1	Contemporary Women's Short Fiction
WoSt 5205	Sec 5, 6	Woman: A Sense of Identity

Noncredit Programs

The Compleat Scholar

Telephone 624-8880 for information.

The Compleat Scholar (CSch) is a program of non-credit liberal arts courses. The title is adapted from Isaak Walton's "The Compleat Angler," and is used here to mean the educated person of eclectic taste. However, you don't need a college degree to enjoy CSch courses; anyone may register. The only admission requirement is the desire to learn. There are no exams to study for or papers to write.

Compleat Scholar courses celebrate the world of ideas by exploring topics ranging from astronomy and physics to philosophy and the humanities. In classes taught by University faculty and staff, participants have an opportunity to pursue a new interest or return to an idea previously studied.

Stimulating and challenging learning is offered in a wide variety of formats including lecture, discussion, and field trips. Compleat Scholar courses are offered in the daytime, early evenings, or on Saturdays. Some classes are held over a weekend in a retreat-type setting. Some are held at convenient neighborhood locations such as public libraries, others on the University campus.

See the following pages for more information about Compleat Scholar courses.

The Practical Scholar

Telephone 624-8880 for information.

The Practical Scholar (PSch) is a program of non-credit courses that address common practical problems and develop specific skills. PSch courses use the research and teaching expertise of the University to help people solve problems they face in their personal, academic, and work life. Topics explored in Practical Scholar courses range from Preparing for the GRE to Selecting the Best Plants for Your Home or Garden. You can also study a foreign language for traveling, gain insight in personal finance, learn about parenting, or improve communication skills.

Like the Compleat Scholar, Practical Scholar courses are offered in a wide variety of formats, in convenient locations, and at different times of the day. Anyone may register for a course; there are no admission or entrance requirements. Students need only a desire to learn. See the following pages for more information about the Practical Scholar.

Cooperative Offerings

Some Compleat Scholar and Practical Scholar courses are offered in cooperation with other University and non-University educational resources. Special tuition discounts may be offered to members of those resources, and the costs are listed when applicable.

Courses offered in cooperation with the University's Bell Museum of Natural History: CSch 0507, 0516, 0521, 0523, 0527, 0528, 0531, 0532, 0534, 0535, 0536, 0539, 0553, 0581, and PSch 0951.

Courses offered in cooperation with the Minnesota Zoo: CSch 0501, 0524, 0529, 0530, 0532, and 0533.

Courses offered in cooperation with Walker Art Center: CSch 0103, 0104, 0105, and 0146.

Courses offered in cooperation with the Minneapolis Institute of Arts: CSch 0100, 0101, 0102, 0107, and 0111.

Courses offered in cooperation with the Minnesota Landscape Arboretum: CSch 0313, 0314, and PSch 0955.

Courses offered in cooperation with the Minnesota Historical Society: CSch 0211 and 0212.

Courses offered in cooperation with the Woman's Club of Minneapolis: CSch 0143, 0204, 0210, 0285, and 0403.

Courses offered in cooperation with the Frederick R. Weisman Art Museum: CSch 0109, 0110, and 0121.

Courses offered in cooperation with the Minnesota Opera: CSch 0141 and 0144.

Course offered in cooperation with the Minnesota Supercomputer Institute: CSch 0576.

Registration in Compleat and Practical Scholar Courses

Unless otherwise noted, registration procedures, dates, and locations are the same as for credit registration for fall, winter, and spring quarters. See the When and How to Register section of the Bulletin for details. Late registrations for noncredit classes must be accompanied by a late fee. See page 16. Late registration dates are listed with course descriptions for each noncredit class.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

Noncredit Courses

Books for Compleat and Practical Scholar Courses

In some cases students will be expected to purchase texts for classes. When the purchase of books is advised, those books will usually be available at the Minnesota Book Center in Williamson Hall on the East Bank campus of the University. See bookstore hours on page 18.

Tuition for Compleat and Practical Scholar Courses

See course descriptions for tuition charges for each course.

University employees who wish to take noncredit classes must pay one-half the regular tuition plus fees (if any). Eligible employees are those working at least 75 percent time in an ongoing or temporary appointment; working 100 percent time during the period for which the course is held if on a 9-month or 11-month appointment; and those on maternity or other leaves without pay. Employees on student appointments, family members of University employees, and laid-off employees are not eligible for this reduced-tuition plan. When registering, employees must submit a letter from their supervisor or the head of their department verifying employment. For limited enrollment classes, registrations will be accepted starting the second week of mail registration. For nonlimited classes, students may register during the regular registration periods.

Persons 62 and older receive a 10-percent discount on all noncredit courses. Persons who have current memberships with Walker Art Center, the Minneapolis Institute of Arts, the Bell Museum of Natural History, the Minnesota Zoo, the Minnesota Historical Society, and the Minnesota Landscape Arboretum receive 10-percent discounts in courses offered cooperatively with these organizations (see lists of courses above and course descriptions for tuition). Only one 10-percent discount may be applied to each registration. Participants pay full course and special fees, if any.

Beginning this year, students who register and pay regular tuition for a fall 1993 CSch or PSch course are eligible for a 10-percent discount off the regular

tuition of winter and spring 1994 CSch and PSch courses. To receive the discount, students must include a copy of their fall fee statement with their winter or spring registration form. Tuition can be determined by noting the "age 62" cost of the course, which is always 10 percent less than regular tuition. This offer does not apply to courses taken at reduced-tuition rates in the fall or to Compleat Scholar Weekend courses, and participants pay full course or special fees, if any. This discount may not be combined with other reduced-tuition options.

No third-party billing is permitted for noncredit classes. Please enclose a check or money order or credit card authorization in payment (see registration form for details).

PLEASE NOTE—There are no tuition discounts for Compleat Scholar Weekends.

Refund Schedule for Compleat and Practical Scholar Courses

Students who wish to cancel registration in a course must do so officially, either in person or by writing to Extension Classes, 101 Wesbrook Hall, University of Minnesota, 77 Pleasant Street S.E., Minneapolis, MN 55455. By doing so, they will, if eligible, receive a refund according to the following schedule:

1 session class	100% before class meets 0% after class has met
2 session class	100% before class meets 0% after first class
3-4 session class	100% before class meets 50% before second class 0% after
5 or more sessions	100% before class meets 75% before second class 50% before third class 0% after

Refund requests for one- or two-day classes or seminars must be received in writing or in person three working days in advance of the class. Registrants who fail to attend or to cancel properly are liable for the entire fee. Late fees are not refundable in any case.

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

**THE
COMPLEAT
SCHOLAR**

Options



**Weekend
Courses**

Since you lead a busy life and have many demands on your time, Compleat Scholar/Practical Scholar courses come in a wide variety of formats to fit your schedule. Select from morning, afternoon, and evening classes—some on campus, some in convenient neighborhood locations. Classes also are scheduled in the early evening so that you can come to campus directly from work. Some courses meet on Saturday, some feature retreat-type settings, and some are quite brief and focused, featuring just a meeting or two and perhaps a field trip. Choose one or several courses at a time or a location convenient to you.

Morning Classes

- 0208 Where Is Our Nation Headed?: A Discussion Group
- 0443 Forgotten Heirlooms: Short Stories of Famous Victorian Novelists
- 0802 Enhancing Self-Esteem

Afternoon Classes

- 0105 "I Will Not Make Boring Art": The 1970s and the Conceptual Avant-Garde
- 0230 Philosophical Reflections on Female Friendships
- 0806 Why a Living Trust?

Evening Classes

- 0146 The Fine Art of Film Reviewing
- 0565 Dawn of a New Age: A Short History of Space Exploration
- 0812 Relationship Loss: A Guide Through Grief Into Healing

Saturday Classes

- 0313 Spring Journal Pilgrimage: A Workshop With Phebe Hanson
- 0530 Sharks: Realities and Myths
- 0843 "People-Smarts": How to Figure Out, Communicate With, Get Along With, Influence, and Persuade Others

Courses With Field Trips

- 0120 Place, Time, Culture: Postwar Architecture in the Twin Cities
- 0216 In Search of Little Crow: The 1862 Minnesota-Dakota Conflict
- 0521 Eagles: Their Natural History and Place as a Cultural Icon

Weekend Courses

- 0801 Mid-Life Career Audit: Deciding What To Do With the Rest of Your Life
- 0702 Wildflowers of the North Shore

Compleat Scholar Weekends

Spend uninterrupted time reading a book, discussing a challenging idea, or studying with an expert. Compleat Scholar Weekends (CSW) combine the pleasures of learning with a weekend retreat away from it all. Each weekend is led by a University of Minnesota faculty member or expert, is limited in size to allow for small group conversations, and is held at a comfortable retreat center or lodge with recreational facilities to enjoy during your free time.

Fall

- CSW 0802 Some Women Are Born Leaders: A Conversation (Oct. 29-31)

Winter

- CSW 0703 Winter Wildlife (Feb. 18-20)
- CSW 0801 Mid-Life Career Audit: Deciding What To Do With the Rest of Your Life (Mar. 11-13)

Spring

- CSW 0803 Physics and the Meaning of Life (Apr. 29-May 1)
- CSW 0700 Spring Wildflower Weekend (Apr. 30-May 1)
- CSW 0702 Wildflowers of the North Shore (June 17-19)

Noncredit Courses



Minnesota Scholar

The Minnesota Scholar consists of courses which describe Minnesota's various cultures, examine its natural and social environment, and explore its history. Learn what makes Minnesota interesting. Many courses are offered in cooperation with other cultural institutions like the Minnesota History Center. Some involve field trips or excursions to historic sites. Take one or several and learn more about where you live.

Fall

0192	St. Paul's Historic Ramsey Hill: A Walking Tour
0194	Historic Lowry Hill: A Walking Tour
0210	Change in Rural Minnesota
0211	Manoominikewin: Stories of Wild Ricing
0216	In Search of Little Crow: The 1862 Minnesota-Dakota Conflict
0293	Who Are the People of Minnesota?
0446	Wanda Gag and After: Children's Picture Books
0507	The Dynamic Ecology of Midwestern Forests
0531	The Ways of Minnesota's Fishes
0534	Fall Wildflowers and Grasses of Minnesota
0584	Droughts, Floods, and Global Warming: Monitoring Minnesota's Changing Climate

Winter

0121	Frederick R. Weisman Art Museum: Architecture, Institution, Culture, and Context
0212	A Common Ground: Minnesota Communities
0244	Fishing Rights, Economic Expansion, Old Growth Forests: Ethics in Natural Resource Management
0703	Winter Wildlife (Compleat Scholar Weekend)

Spring

0120	Place, Time, Culture: Postwar Architecture in the Twin Cities
0190	Historic Minneapolis: A Walking Tour
0528	Late Spring Ornithology: An Introduction to the Birds of Minnesota
0535	A Celebration of the Season: Spring Wildflowers in Minnesota
0551	Minnesota Geology: 3.6 Billion Years and Continuing
0702	Wildflowers of the North Shore (Compleat Scholar Weekend)



Gardening, Finances, Wellness, etc.

Interested in gardening? Need help getting your finances in order? Concerned about your health and physical fitness? Courses in this category encompass a variety of issues and topics from a wide range of disciplines. They offer the research and teaching expertise of the University as you develop skills or solve problems. Like all Practical Scholar courses, they are offered at times of the day and places convenient to you. Choose one or several and learn to exercise your mind and body.

Fall

0903	Financial Planning for Women
0920	Equal Partnership: Real and Personal Property Rights in Relationships
0932	Exercise and Health for Women
0938	Reclaiming Your Body: Introduction to Body Work
0965	Floral Design: Arranging Native Plants

Winter

0936	Nutrition, Health, and Disease: Facts and Fantasies
0937	Stress, Coping, and Health
0953	Pruning Landscape Trees and Shrubs
0958	Designing Gardens and Yards With the Environment in Mind

Spring

0912	Portfolio Management and Asset Allocation Strategies
0933	Women's Health Issues
0934	Fitness for the Advanced Exerciser: Making Knowledgeable Choices
0950	Landscaping the Minnesota Homegrounds
0956	Yard Smart: Reducing Yard Wastes, Maintenance, and Plant Disease
CSch 0106	Malcolm X: A Critical Inquiry
CSch 0110	Sociology, Ideology, and the Production of Art
CSch 0115	The Message Behind the Medium
CSch 0168	Drawing Your Life... Everyday

Spring

CSch 0101	The Splendor of India
CSch 0104	Performance Art: Outsider Power
CSch 0130	All the World's A Stage—Then and Now
CSch 0133	The Bottom Line of American Music



Natural and Physical Sciences

Courses in the sciences help us understand ourselves as biological organisms and to see our place in the web of life. We can derive satisfaction and joy from observing the underlying order and beauty of the natural world.

Courses in this category include popular natural history courses (many at the Bell Museum and the Minnesota Zoo); courses which examine the social and political implications of scientific progress; and courses in physics, biology, and astronomy.

Fall

0527	Birds of Prey: Their Biology and Ecology
0533	Big Cats of the World: Biology, Behavior, and Conservation Issues
0536	Supermarket Botany
0560	Quarks to Quasars: An Overview of 20th-Century Physics
0576	A Look at the Supercomputer and Its Uses: Machine for the Information Age

Winter

0521	Eagles: Their Natural History and Place as a Cultural Icon
0542	It All Starts With an Egg: Introduction to Developmental Biology
0565	Dawn of a New Age: A Short History of Space Exploration
0572	The Origin of Mathematics: From Egypt to the Middle Ages

Spring

0535	A Celebration of the Season: Spring Wildflowers in Minnesota
0551	Minnesota Geology: 3.6 Billion Years and Counting
0577	The History of Computers: Approaches to Computation
0589	A Green Marshall Plan? Impact of U.S. Foreign Policy on the Global Environment



History, Philosophy, Humanities, Etc.

Classes grouped in this Compleat Scholar category come from a wide range of disciplines including philosophy, history, psychology, anthropology, and women's studies. The element linking them is their focus on human relationships—with others, with the parts of the self, and with a purpose beyond ourselves.

Fall

0200	The Legacy of JFK: Camelot 30 Years Later
0242	Who Will Live: Ethical Dilemmas in Health-Care Decisions
0251	Understanding Human Sexual Behavior
0294	Gone But Not Forgotten: Funeral Customs in the U.S.

Winter

0212	A Common Ground: Minnesota Communities
0213	Estranged Bedfellows: Freedom of the Press and Government
0232	Redefining Spirituality: Woman and American Religion
0244	Fishing Rights, Economic Expansion, Old Growth Forests: Ethics in Natural Resource Management

Spring

0206	Rush Limbaugh to Malcolm X: Contemporary Political Voices
0240	Images From Our Past: Sacred Sites and Sanctuaries
0254	Dream Work: A Jungian Approach
0290	Understanding Lethal Conflicts: When Nationalities and Neighbors Turn Murderous

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

The Compleat Scholar course offerings

The Arts

CSch 0100 PORTRAITS: HUMAN APPEARANCE AND CHARACTER IN SOCIETY. No credit, \$47 (age 62 and MIA members, \$42.30).

How have the human form and character been represented by artists? Through discussion, slides, and a museum tour, investigate why people have wanted to possess paintings of their own images (and others) and how artists approach the task of portrait painting. What social and artistic factors enter into the depiction of people? How is it possible to show invisible, inner traits of character through the external body? Discover the conventions artists use, and how and why these have changed over time. Learn how and why representations of men and women differ and what makes a "good" portrait. (Offered in cooperation with the Minneapolis Institute of Arts. Both MIA and Compleat Scholar will accept registrations. Limited to a combined total of 30)

Spring Spec Term, ★Sec 1, W, 1-3, Apr. 13-27 (3 meetings), Mpls Institute of Arts, 2400 3rd Ave. South. *No late fee through Apr. 6.*

(Nancy Wisely has taught sociology at the University of Minnesota and the University of St. Thomas. She received her Ph.D. in sociology from the University of Minnesota and focused her dissertation on a study of portraits and society)

CSch 0101 HENRI MATISSE: STYLE AND CONTEXT. No credit, \$45 (age 62 and MIA members, \$40.50).

Offered in conjunction with the exhibit "Matisse in Minneapolis" at the Minneapolis Institute of Arts. Examine Henri Matisse's stylistic development from the early neo-impressionist work of the 1890s to the late cutouts of the 1950s. Study his painting, drawing, sculpture, printmaking, and cut paper works. Compare his work to his contemporaries, including the Nabis, Picasso and the cubists, the surrealists, and the abstract expressionists. (Offered in cooperation with the Minneapolis Institute of Arts. Both MIA and Compleat Scholar will accept registrations. Limited to a combined total of 40)

Fall Spec Term, ★Sec 1, Th, 6-8, Oct. 21-Nov. 4 (3 meetings), Mpls Institute of Arts, 2400 3rd Ave. South. *No late fee through Oct. 14.*

(Patricia Briggs is a Ph.D. candidate in art history at the University of Minnesota. Her dissertation focuses on the work of Matisse. She has taught courses in art history and women's studies at Ohio State University and the University of Minnesota)

CSch 0102 INTERSECTIONS WITH ANTIQUITY: EUROPEAN GRAPHIC ARTS AND PAINTING, 1760-1830. No credit, \$61 (age 62 and MIA members, \$54.90).

How did artists, including Jacques-Louis David and Raphael Mengs, use drawings as preparation for a finished work? Examine this academic process through the analysis of drawings as careful studies for completed art. Discover the working process of the artist and the influences of master on student during a period representing the merging of baroque, neoclassic, and romantic themes and tradition. In addition to discussions of the leaders of the neoclassic schools in France and Germany, consider the early themes of Girodet and the works of the mysterious Prud'hon. (Offered in cooperation with the Minneapolis Institute of Arts. Both MIA and Compleat Scholar will accept registrations. Limited to a combined total of 40)

Winter Spec Term, ★Sec 1, Th, 6-8, Feb. 24-Mar. 17 (4 meetings), Mpls Institute of Arts, 2400 3rd Ave. South. *No late fee through Feb. 17.*

(Elizabeth K. Menon is a Ph.D. candidate in art history at the University of Minnesota. Her special interest is the graphic arts of 19th-century France, a topic on which she has published several articles)

CSch 0104 SURVEY OF CONTEMPORARY ART: AMERICAN ART IN A GLOBAL AGE. No credit, \$63 (age 62 and WAC members, \$56.70).

The last 30 years have seen an important shift in the international art world, from the dominance of American artists, including Jasper Johns and Jackson Pollock, to the present pluralism where national boundaries become blurred. Examine the imagery, issues, and direction of American art as it approaches the 21st century. (Offered in cooperation with Walker Art Center. Limited to 70)

Spring Spec Term, ★Sec 1, W, 6-8, Apr. 6-27 (4 meetings), Walker Art Center, Lecture Room, Vineland Pl., Mpls. *No late fee through Mar. 30.*

(Jackie Copeland is an art historian and assistant education director at the Walker Art Center. She has taught numerous classes on modern and contemporary art)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSch 0105 "I WILL NOT MAKE BORING ART": THE 1970S AND THE CONCEPTUAL AVANT-GARDE. No credit, \$76 (age 62 and WAC members, \$68.40).

What came after the dominance of modernism in the 1950s and 1960s? Formalism and painting were declared "dead," and modern architecture, after a brief life, was being dynamited by critics. The 1960s and 1970s conceptual movement analyzed the relationship between visual art and language. Rather than saying that "art is art," the conceptual artists began to articulate art's limits by examining its presuppositions. Explore the background of the conceptual movement through artists like Marcel Duchamp and movements like surrealism. Examine the work of Kosuth, Buren, Baldessari ("I will not make boring art"), Beuys, Broodthaers, and others. Additional international movements of the 1970s, including earthworks and performance, are studied to complement the conceptual artists and the issues their work promotes. (Offered in cooperation with Walker Art Center. Limited to 70)

Winter Spec Term, ★Sec 1, W, 1-3, Jan. 12-Feb. 9 (5 meetings), Walker Art Center, Lecture Room, Vineland Pl., Mpls. *No late fee through Jan. 5.*

(Randall K. Van Schepen is an advanced doctoral candidate at the University of Minnesota studying American art criticism. He wrote a thesis on Marcel Duchamp and his field of interest is post-World War II European and American art and theory)

CSch 0107 THE GLORY AND BRILLIANCE OF ISLAMIC ART. No credit, \$33 (age 62 and MIA members, \$29.70).

Discover the opulent visual heritage of Islam. This two-part lecture and discussion focuses on the artistic achievements of the Islamic world from Spain to India and is offered in conjunction with a special exhibition of rarely displayed Islamic art at the Minneapolis Institute of Arts. Students will investigate the development of Islamic painting, ceramics, textiles, and architecture from the 7th through 17th centuries. (Offered in cooperation with the Minneapolis Institute of Arts. Both MIA and Compleat Scholar will accept registrations. Limited to a combined total of 30)

Spring Spec Term, ★Sec 1, Th, 6-8, Apr. 21, 28 (2 meetings), Mpls Institute of Arts, 2400 3rd Ave. South. *No late fee through Apr. 14.*

(Catherine B. Asher is an assistant professor of art history at the University of Minnesota, an expert on Islamic art, and author of Architecture of Mughal India)

CSch 0108 INDELIBLE IMAGES: CONTEMPORARY ARTISTS CONFRONT THE HOLOCAUST. No credit, \$52 (age 62, \$46.80).

How did artists react to the Holocaust, an event which involved the Nazi's destruction of six million Jews and five million other innocent victims? Rico LeBrun called it an event which artists should not avoid. Survivors paint in a literal fashion, while those who are not directly connected use metaphor. This course will examine how mainstream artists have approached the subject since 1945. Some survivors' art will be considered, but mainly the works of Chagall, Picasso, Baskin, LeBrun, Lasansky, Nevelson, Segal, Boltanski, Zoran Music, Art Spiegelman, and others. Coordinated with the exhibit "Anne Frank in the World: 1929-1945" in the Great Hall of the First Trust Center, St. Paul. Class location is within walking distance of the exhibit. This course is not sponsored by the St. Paul Public Library. (Limited to 50)

Fall Spec Term, ★Sec 1, M, 5:45-7:45, Sept. 27-Oct. 11 (3 meetings), St. Paul Public Library, 4th floor meeting room, 90 West 4th St. *No late fee through Sept. 20.*

(Stephen Feinstein is a professor of history at the University of Wisconsin-River Falls and an adjunct professor in Jewish studies at the University of Minnesota. He is currently writing a book, "Indelible Images: Contemporary Artistic Responses to the Holocaust")

CSch 0109 IMAGINING THE HOLOCAUST. No credit, \$72 (age 62, \$64.80).

The Holocaust happened in the heart of civilized Europe and was perpetrated by Germany and the Nazis who viewed themselves as the embodiment of modern technological civilization. Recent events in Eastern Europe have shown that the Holocaust can happen again. Two of the four lectures provide a conceptual setting for understanding the extermination of European Jewry: one on artistic responses to the event, and another by Professor Robert O. Fisch on his own experiences in Hungary as a survivor. Fisch's exhibit, "The Yellow Star: A Lesson of Love From the Holocaust" at the Frederick R. Weisman Art Museum, emphasizes that, even during horrible experiences, love overshadows hate, and explores how to remain human in inhumane circumstances. (Offered in cooperation with the Frederick R. Weisman Art Museum. Limited to 24)

Spring Spec Term, ★Sec 1, W, 6-8, Apr. 20-May 11 (4 meetings), Frederick R. Weisman Art Museum, Billy & Jody Weisman Seminar Room. *No late fee through Apr. 13.*

(See Stephen Feinstein's biography in CSch 0108. Robert O. Fisch is a professor of pediatrics at the University of Minnesota, an artist, and a survivor of the Holocaust)

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Noncredit Courses

CSch 0110 HIDDEN HISTORY: POLITICAL ACTIVISM AND ART IN THE U.S., 1900 TO PRESENT. No credit, \$63 (age 62, \$56.70).

American political movements played a key role in shaping 20th-century American art. From Man Ray's anarchist broadsides to Robbie Conel's incendiary posters, from Wobbly stick-ons to ACT UP installations, artists have derived aesthetic and political inspiration from these movements. Emphasizing political posters, look at slides and other visual materials to examine the kinds of artwork these artists produced and how changing political contexts affected their work. (Offered in conjunction with the exhibit "Art As Activist" at the Frederick R. Weisman Art Museum. Limited to 24)

Spring Spec Term, ★Sec 1, T, 6-8, Apr. 19-May 10 (4 meetings), Frederick R. Weisman Art Museum, Billy & Jody Weisman Seminar Room. *No late fee through Apr. 12.*

(Vince Leo is an art critic, photographer, and associate editor of Artpaper. He has taught at the Minneapolis College of Art and Design, Film in the Cities, and the American Photography Institute at New York University. He has been awarded artists fellowships from the Bush Foundation, the Jerome Foundation, and the McKnight Foundation)

CSch 0111 HISTORIC DRESS IN ART. No credit, \$61 (age 62 and MIA members, \$54.90).

From Julius Caesar to Marie Antoinette with stops in between, here's a chance to discover the intriguing historic styles of dress seen in art and increase your appreciation of the works themselves by looking beyond contemporary opinions of the clothing. Dress may be seen as an art form that provides rich personal and cultural expression or symbols for artists to use in their works. In turn, the works become a concrete interpretation of our values and the ways we imagine ourselves. Through slides, lecture, and discussion, examine this exchange of influences as seen in various art works at the Minneapolis Institute of Arts. (Offered in cooperation with the Minneapolis Institute of Arts. Both MIA and Compleat Scholar will accept registrations. Limited to a combined total of 40)

Winter Spec Term, ★Sec 1, W, 1-3, Jan. 19-Feb. 9 (4 meetings), Mpls Institute of Arts, 2400 3rd Ave. South. *No late fee through Jan. 12.*

(Holly Ryan has taught costume history in the Department of Design, Housing, and Apparel at the University of Minnesota. She is working on an advanced degree in the history of dress)

CSch 0120 PLACE, TIME, CULTURE: POST-WAR ARCHITECTURE IN THE TWIN CITIES. No credit, \$103 (age 62, \$92.70).

No building is designed in a vacuum, isolated from

those external influences of its time. Study select Twin Cities buildings and analyze their design in terms of site, use, and the broader impact of the economic, cultural, and stylistic backgrounds of their historical periods. Examine buildings as diverse as Christ Lutheran Church, the IDS building, Dayton House, and Lincoln Centre to learn how to place these buildings chronologically and understand why they belong to a certain period. Course includes a field trip (May 7) to visit some of the sites discussed in class. (Limited to 30)

Spring Spec Term, ★Sec 1, W, 6-8, Apr. 6-May 4 (5 meetings plus field trip), FordH 115. *No late fee through Mar. 30.*

(Marc Partridge, AIA, is a registered architect with broad experience in municipal, office, and residential design. He presently serves on the AIA Minneapolis Board of Directors. Nick Marcucci is a registered architect who has worked for several architectural firms in the Twin Cities and London. Their respective architectural works have won awards, been widely published, and selected for exhibitions)

CSch 0121 FREDERICK R. WEISMAN ART MUSEUM: ARCHITECTURE, INSTITUTION, CULTURE, AND CONTEXT. No credit, \$70 (age 62, \$63).

In conjunction with the opening of the Frederick R. Weisman Art Museum at the University of Minnesota, take this opportunity to examine the museum from a variety of perspectives: as architecture (including other work by architect Frank O. Gehry), as museum and exhibition space, as campus institution, and as a vehicle for articulating the role of art in society. The role of the museum in society has become increasingly controversial; concerns have been raised about "high" art versus "low" art, taste and tradition versus provocation and change, and commercialism. Explore how this new building seeks to engage these and other issues, taking positions that encompass the radical, the conservative, and the altogether provocative. Members of the class will be encouraged to assess the new museum from diverse critical viewpoints. (Offered in conjunction with the opening of the Frederick R. Weisman Art Museum. Limited to 24)

Winter Spec Term, ★Sec 1, Th, 6-8, Feb. 10-Mar. 3 (4 meetings), Frederick R. Weisman Art Museum, Billy & Jody Weisman Seminar Room. *No late fee through Feb. 3.*

(John Archer, architectural historian, is an associate professor of cultural studies at the University of Minnesota. He has done extensive research and writing on British and American architectural history, architectural theory, and urban and suburban history)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSch 0122 READING ARCHITECTURE: IMAGINING OUR PLACE IN THE WORLD.

No credit, \$84 (age 62, \$75.60).

What do buildings say? Learn creative skills in reading and interpreting the language of architecture. Examine the human body and nature in relationship to the primary architectural elements of column, wall, and roof. How are these elements arranged and articulated to form an image that reflects a particular culture and society? Meaning is read into this image when the ideas, purpose, construction, and materials of the building engage our imagination and inspire a profound interpretation of our place in the world. Architecture from Europe, Asia, and America will be presented and openly discussed. Includes hands-on experience with architectural models. (Limited to 20)

Spring Spec Term, ★Sec 1, W, 6-8, Apr. 6-May 4 (5 meetings), Arch 20. *No late fee through Mar. 30.*

(Todd Rhoades is a lecturer in the College of Architecture and Landscape Architecture at the University of Minnesota. He is a registered architect and the owner of Todd Rhoades Architecture)

CSch 0124 THE AMERICAN HOUSE: CHANGE AND COMMUNITY. No credit, \$90 (age 62, \$81).

The concept of the "ideal" house has evolved over time in response to many issues, both societal and technological. Explore the history of the American house and the changing relationship between values and housing. Discover how these "ideal" houses form connections within communities and how assumptions underlying housing standards of the past have affected the fabric of the city. Analyze how we shape our houses today, and how they in turn shape us and the communities in which we live. Includes lectures, group discussion, tours of regional homes from various eras, and a hands-on session to design one's own "ideal" home.

Fall Spec Term, Sec 1, W, 6:30-8:30, Oct. 6-Nov. 10 (6 meetings), FordH 50. *No late fee through Sept. 29.*

(Michaela Mahady and Tim Fuller are architects with Mulfinger, Susanka, and Mahady Architects, a firm which specializes in residential architecture. Mahady is also a designer of architectural glasswork for Pegasus Studio. Fuller has an extensive background in housing, home construction, and remodeling)

CSch 0131 OTHELLO: THE PLAY, THE FILMS, AND THE GUTHRIE PRODUCTION. No credit, \$61 (age 62, \$54.90).

Reading a play, watching a film, and experiencing a live production are three different activities producing three different experiences. Paul Winfield's inter-

pretation of *Othello* at the Guthrie Theater provides an occasion to examine Shakespeare's classic tragedy as literature and as production. Film versions of *Othello* will be shown to demonstrate the wide variety of interpretations and experiences a text can generate. Previous exposure to Shakespeare is not required. Final class will meet at the Guthrie Theater to watch the performance. Tuition does not include ticket cost; purchase of tickets will be discussed in class.

Fall Spec Term, Sec 1, Th, 6-8, Oct. 7-28 (4 meetings), LindH 215. *No late fee through Sept. 30.*

(Bill West is a doctoral candidate in English literature at the University of Minnesota. He teaches introductory Shakespeare classes and lectures at the Guthrie Theater for their Shakespeare productions)

CSch 0135 JAZZ IN AMERICA. No credit, \$91 (age 62, \$81.90).

Jazz as a style of music in the 1990s is difficult to describe. Although one listener's definition of jazz may be very different from another's, many points of view are valid and justified. Is the bebop style of Dizzy Gillespie the sound of classic jazz, or is it the swing era's Tommy Dorsey? Learn to distinguish between the different styles of jazz by listening and analyzing music, and understanding its historical perspective. (Limited to 40)

Spring Spec Term, ★Sec 1, M, 6-8, Apr. 4-May 9 (6 meetings), FergH 105. *No late fee through Mar. 28.*

(Michael Scott has a master's degree in jazz studies from Indiana University and is pursuing a Ph.D. in music education at the University of Minnesota. He has been a music educator and free-lance musician for over 10 years, performing with the bands of the Temptations, the Four Tops, Perry Como, and Melissa Manchester)

CSch 0136 POP AND SOUL MUSIC IN AMERICA. No credit, \$91 (age 62, \$81.90).

What makes American popular music popular? And what is "soul"? Learn contributions of seminal figures of popular American music including Little Richard, Elvis Presley, and the Motown artists. Understanding the roots of this music provides unique insights into the economic, social, and political forces which have and continue to shape American society (and vice versa). There will also be lots of music! (Limited to 20)

Fall Spec Term, ★Sec 1, W, 6-8, Oct. 6-Nov. 10 (6 meetings), FergH 203. *No late fee through Sept. 29.*

(See Michael Scott's biography in CSch 0135)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

Noncredit Courses

CSch 0137 SOUNDS OF OUR TIME: AMERICAN MUSIC FROM WORLD WAR I TO PRESENT. No credit, \$94 (age 62, \$84.60).

Explore the 20th-century trends in American art music, from the patriotism of Charles Ives and Aaron Copland to the minimalism of Philip Glass and the performance art of Laurie Anderson. Discover the diversity and vitality of American musical culture and the highly individual styles of American composers. The course emphasizes the influence of technology and popular culture on "serious" concert music, and examines the social and political agendas in music of our century. (Limited to 40)

Fall Spec Term, ★Sec 1, M, 6:15-8:15, Oct. 4-Nov. 8 (6 meetings), FergH 107. *No late fee through Sept. 27.*

(DonnaMae Gustafson holds a Ph.D. in music from the University of Minnesota. She has taught courses about the music of many historical periods and given previews for St. Paul Chamber Orchestra audiences. Her research includes 16th-century Italian music and theatre)

CSch 0138 A ROMANTIC DUET: THE LIVES AND MUSIC OF CLARA AND ROBERT SCHUMANN. No credit, \$63 (age 62, \$56.70).

The love affair, marriage, and joint musical careers of Clara Wieck and Robert Schumann form a fascinating story of devotion, professional success, and personal tragedy. Both virtuoso pianists and composers, the Schumanns exerted strong influence on the development of 19th-century romantic music. Examples of their piano pieces, songs, and orchestral works are played and discussed, with emphasis on form, style, and meaning. Readings from the couple's diaries, letters, and correspondence with Johannes Brahms reveal details of their professional and private lives. (Limited to 40)

Spring Spec Term, ★Sec 1, W, 6:15-8:15, Apr. 13-May 4 (4 meetings), FergH 107. *No late fee through Apr. 6.*

(See DonnaMae Gustafson's biography in CSch 0137)

CSch 0139 THE ART OF BING CROSBY. No credit, \$78 (age 62, \$70.20).

Bing Crosby was the singer who influenced and inspired two generations of record buyers, moviegoers, and radio and TV audiences all over the world. As the first mass media pop star of the century, he set the pattern for all the jazz-based pop singers to follow, both as an artist and as a cultural figure. Through audio and video sources, study the evolution of his ground-breaking style, from his first recordings in the 1920s to his final performances as the elder statesman

of pop music in the 1970s. Learn how and why Bing was recently called by *Billboard's* Joel Whitburn "America's most popular star of the first half of the 20th century."

Spring Spec Term, Sec 1, T, 6:15-8:15, Apr. 5-May 3 (5 meetings), FergH 105. *No late fee through Mar. 28.*

(Arne Fogel is an actor, singer, musician, composer, writer, producer, and entertainment historian. He has produced and sung music jingles for Twin Cities area companies and produced hundreds of radio programs on American popular music. He received a degree in theatre education from the University of Minnesota)

CSch 0140 FUNDAMENTALS OF MUSIC. No credit, \$91 (age 62, \$81.90).

All too often, we hear music without really listening to it. Examining music from a composer's perspective can push music out of the background of our daily experience and make us more sophisticated listeners. Participants find out how to listen to music perceptively and critically, and will begin to develop a relevant musical vocabulary. Become acquainted with the fundamentals of Western musical composition, learning to recognize and interpret organizing principles from small details through whole genres. Music will be discussed and analyzed in terms of its constructive elements (melody, harmony, rhythm, timbre, medium) as well as its syntactical, structural, and formal concepts (tonality, texture, form). Pieces that are representative of a variety of forms, historical styles, media, and social functions will be studied by means of lectures, demonstrations, class discussion, and recorded music. The class focuses on the classical music traditions between the baroque and the present, but also includes musical excursions into popular and non-Western music. No previous musical experience is required. (Limited to 30)

Fall Spec Term, ★Sec 1, Th, 6-8, Sept. 30-Nov. 4 (6 meetings), Hennepin Center for the Arts, Room 401, 528 Hennepin Ave., Mpls. *No late fee through Sept. 23.*

(Michael V. Smith has taught music at Ottawa University. He is a doctoral candidate in music education at the University of Minnesota)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSch 0141 MINNESOTA OPERA PRODUCTION CLASS: *THE MERRY WIDOW*. No credit, \$63 (age 62 and Minnesota Opera members, \$56.70).

The Merry Widow is Franz Lehár's evocation of a time of opulence. For this production a new book and lyrics are being written. Get to know the story, hear some of the music, and discover the social climate in which *The Merry Widow* was created. During the final session discuss responses—both the critics' and your own—to the Minnesota Opera production. Tuition does not include the price of a ticket. (Offered in cooperation with the Minnesota Opera. Both the Minnesota Opera and Compleat Scholar will accept registrations. Limited to a combined total of 25)

Fall Spec Term, ★ Sec 1, M, 6:30-8:30, Oct. 4-Nov. 1 (4 meetings—no class Oct. 25), Minnesota Opera Center, 620 North First St., Mpls. No late fee through Sept. 27.

(Stephen Houtz, education director for the Minnesota Opera, is a composer, pianist, and lecturer)

CSch 0142 THE BLUES: AN OVERVIEW OF THE ROOTS OF AMERICAN MUSIC. No credit, \$94 (age 62, \$84.60).

Starting with work songs, field hollers, and early rural blues pieces, explore in layperson's terms the musical style, social implications, and growth of the blues that resulted in early urban blues, rhythm and blues, early rock and roll, and jazz idioms. Explore the music of artists such as Leadbelly, Sleepy John Estes, Floyd Jones, Muddy Waters, Buddy Guy, Johnny Otis, Bessie Smith, Count Basie, and others.

Winter Spec Term, Sec 1, T, 6:15-8:15, Jan. 4-Feb. 8 (6 meetings), FergH 105. No late fee through Dec. 28.

(Chris Granias, an advanced graduate student in the Department of Music at the University of Minnesota, is the division head for class and ensemble instruction and an instructor of composition at the MacPhail Center for the Arts. He has conducted workshops on jazz rock, blues, jazz, and rags and is also a free-lance composer and a member of the Minnesota Composers Forum)

CSch 0143 DISCOVERING OPERA: *THE MERRY WIDOW*. No credit, \$47 (age 62, \$42.30).

A three-session course exploring some of the aspects of this exciting art form. The first session, Discover Opera, will cover a brief history of various operatic forms and take a look at the people who make opera happen. The second session, Anatomy of a Costume, takes a closer look at one important aspect of opera production. Costumes play an important role in a production by communicating nonverbal clues that establish character, time, place, and atmosphere. The third session, *The Merry Widow*, will preview the Minnesota Opera's exciting production that opens Oct. 22. Learn the charming new story, listen to some

of the music, and hear about this inventive production set in Hollywood in the 1920s. (Offered in cooperation with the Woman's Club of Minneapolis)

Fall Spec Term, Sec 1, M, 10 a.m.-12, Oct. 4-18 (3 meetings), Woman's Club of Mpls, 410 Oak Grove. No late fee through Sept. 27.

(Stephen Houtz, education director for the Minnesota Opera, is a composer, pianist, and lecturer)

CSch 0144 MINNESOTA OPERA PRODUCTION CLASS: *IL TROVATORE*. No credit, \$63 (age 62 and Minnesota Opera members, \$56.70).

Il Trovatore is one of Verdi's most passionate operas. Steeped in mysticism and fatalism, the story of mistaken identity and passion communicates beyond its Spanish setting. Get to know the story, hear some of the music, and discover the social climate in which *Il Trovatore* was created. During the final session discuss the responses—both the critics' and your own—to the Minnesota Opera production. Tuition does not include the price of a ticket. (Offered in cooperation with the Minnesota Opera. Both Minnesota Opera and Compleat Scholar will accept registrations. Limited to a combined total of 25)

Spring Spec Term, ★Sec 1, Th, 6:30-8:30, Mar. 24-Apr. 21 (4 meetings—no class Apr. 14), Minnesota Opera Center, 620 North First St., Mpls. No late fee through Mar. 17.

(See Stephen Houtz's biography in CSch 0143)

CSch 0146 THE FINE ART OF FILM REVIEWING. No credit, \$99 (age 62 and WAC members, \$89.10).

Virtually every filmgoer considers him/herself to be a competent critic of the medium. In actuality, film reviewing is a highly specialized profession closely allied to the very industry that it takes to task. Gain an insider's view of the "fine art of film reviewing" with insights offered by professional film critics Deborah Kunk, William Souder, and Jeff Strickler. Reviews by these critics plus film clip viewing provide a starting point for a discussion of aesthetics, interpretation, and the development of new criteria for evaluating contemporary films. (Offered in cooperation with the Walker Art Center. Limited to 70)

Fall Spec Term, ★Sec 1, Th, 6-8:30, Oct. 7-Nov. 4 (5 meetings), Walker Art Center, Lecture Room, Vineland Place, Mpls. No late fee through Sept. 30.

(Bruce Jenkins lectures on film history in the Department of Art History at the University of Minnesota. He earned a doctorate in cinema studies from Northwestern University and since mid-1985 has been film/video curator at the Walker Art Center. Deborah Kunk [film critic for the St. Paul Pioneer Press], William Souder [film critic for the Twin Cities Reader], and Jeff Strickler [film critic for the Minneapolis Star Tribune] compose the panel of film critics)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

Noncredit Courses

CSch 0147 THE ART OF THE BEATLES: THEIR HISTORY, THEIR MUSIC. No credit, \$78 (age 62, \$70.20).

The Beatles were not only the best publicized and most beloved popular music heroes of the 1960s, they were among the most profoundly influential and revolutionary popular artists of the 20th century. The group totally changed the music business of their time, and they effected changes in our culture that extend beyond musical considerations. This course will take the student into the group's evolution and development, paying close attention to each Beatle's role in creating the sound and character of the group. Recordings take us into the creative process as well as the changing image of the Beatles. Video as well as audio sources are used to evaluate the work of the Beatles. Finally, a look at the accomplishments of the individual Beatles since the breakup rounds out the course.

Fall Spec Term, Sec 1, T, 6:15-8:15, Oct. 5-Nov. 2 (5 meetings), FergH 107. *No late fee through Sept. 28.*

(Arne Fogel is an actor, singer, musician, composer, writer, producer, and entertainment historian. He has produced and sung musical jingles for Twin Cities area companies and produced hundreds of radio programs on American public music. He received a degree in theatre education from the University of Minnesota)

CSch 0150 PHOTOGRAPHY: ART AND THE CAMERA. No credit, \$88 (age 62, \$79.20).

An opportunity for people with little or no experience with cameras who want to learn more about photography. Includes a demonstration of equipment, films, and processing. In addition, there will be critiques of students' work and discussions on how to make a good photograph. Covers both the technical and aesthetic sides of photography. Bring camera to first class. (Limited to 24)

Fall Spec Term, ★Sec 1, T, 6:30-9, Oct. 5-Nov. 2 (5 meetings), MacP 5, Millikan. *No late fee through Sept. 28.*

Spring Spec Term, ★Sec 2, M, 6:30-9, Apr. 4-May 2 (5 meetings), NCCE Library, Husom. *No late fee through Mar. 28.*

(Jeff Millikan is a lecturer in the General College and the Department of Studio Arts at the University of Minnesota. His award-winning photography has been exhibited internationally and is in the collections of numerous museums including Walker Art Center. David Husom, assistant professor in the Department of Studio Arts, is a professional photographer with numerous exhibits and publication credits. Also a specialist in digital photography, he is a frequent speaker on the issues of photography, art, and technology)

CSch 0151 BASIC PHOTOGRAPHY I. No credit, \$112 plus \$17 special fee. Total \$129 (age 62, \$100.80 plus \$17 special fee. Total \$117.80).

Learn how to develop and print your own black and white photographs in MacPhail Center's darkrooms. A conventional wet darkroom and a new electronic darkroom will be available for student use outside of class time. In addition, the class will cover camera usage; bring your camera to the first class. (Limited to 24)

Fall Spec Term, ★Sec 1, M, 6-9:30, Sept. 27-Oct. 25 (5 meetings), MacP 5, Husom. *No late fee through Sept. 20.*

Winter Spec Term, ★Sec 2, T, 6-9:30, Jan. 4-Feb. 1 (5 meetings), MacP 5, Husom. *No late fee through Dec. 28.*

Spring Spec Term, ★Sec 3, T, 6-9:30, Mar. 29-Apr. 26 (5 meetings), MacP 5, Millikan. *No late fee through Mar. 22.*

(See instructors' biographies in CSch 0150)

CSch 0152 BASIC PHOTOGRAPHY II. No credit, \$112 plus \$17 special fee. Total \$129 (age 62, \$100.80 plus \$17 special fee. Total \$117.80).

Exposure to advanced darkroom techniques including pushing film, dodging and burning, contrast control, toners, hand coloring, matting and framing, and photo CD and computer imaging. Students have access to MacPhail's darkroom and electronic imaging equipment both in and outside of class. This is also a good refresher course for those who wish to get back into photography. Bring black and white film to develop or negatives and paper to print or a photo CD with images to the first class. (Prereq CSch 0151 or previous darkroom experience. Limited to 24)

Fall Spec Term, ★Sec 1, M, 6-9:30, Nov. 1-29 (5 meetings), MacP 5, Husom. *No late fee through Oct. 25.*

Winter Spec Term, ★Sec 2, T, 6-9:30, Feb. 8-Mar. 15 (5 meetings—no class Mar. 8), MacP 5, Husom. *No late fee through Feb. 1.*

Spring Spec Term, ★Sec 3, T, 6-9:30, May 3-31 (5 meetings), MacP 5, Millikan. *No late fee through Apr. 26.*

(See instructors' biographies in CSch 0150)

CSch 0153 INTERMEDIATE PHOTOGRAPHY. No credit, \$192 plus \$35 special fee. Total \$227 (age 62, \$172.80 plus \$35 special fee. Total \$207.80).

Designed for students wishing to pursue more advanced camera and darkroom techniques. Special attention will be paid to personal projects and interests through critiques and individual conferences. Lab access will be available during the entire term. (Limited to 24)

Winter Spec Term, ★Sec 1, M, 6-9:45, Jan. 3-Mar. 14 (10 meetings—no class Jan. 17), MacP 5. *No late fee through Dec. 27.*

(See Jeff Millikan's biography in CSch 0150)

CSch 0154 INTRODUCTION TO DIGITAL PHOTOGRAPHY. No credit, \$112 (age 62, \$100.80).

This lecture/demonstration course will provide a firm foundation in the growing field of digital photography. The course will cover digital cameras, PhotoCD, PC and Macintosh systems, high-end workstations, and output. Particular attention will be paid to the fundamentals of computer based imaging. Class will include visits to sites which use digital photography workstations. (Limited to 24)

Fall Spec Term, ★Sec 1, T, 6:30-9:30, Oct. 5-Nov. 2 (5 meetings), NCCE 140. *No late fee through Sept. 28.*

(See David Husom's biography in CSch 0150)

CSch 0155 PHOTOGRAPHY: INTRODUCTION TO ELECTRONIC IMAGING I. No credit, \$220 plus \$25 special fee. Total \$245 (age 62, \$198 plus \$25 special fee. Total \$223).

Explore digital photographic imaging using high-end Dicommed workstations. Students learn how to use sophisticated equipment to input, manipulate, and output images. The emphasis of the course is on producing images that can be viewed, evaluated, and critiqued. The class is a mixture of lecture/demonstrations, hands-on experience, and discussion and critiques of students' work. The lab will be open Wednesday evenings for student use. Additional lab time will be arranged. Materials are furnished. (Limited to 16)

Fall Spec Term, ★Sec 1, W, 6-10, Sept. 29-Oct. 27 (5 meetings), Dicommed, 11401 Rupp Drive, Burnsville. *No late fee through Sept. 22.*

Spring Spec Term, ★Sec 2, T, 6-10, Mar. 29-Apr. 26 (5 meetings), Dicommed (new address provided at registration). *No late fee through Mar. 22.*

(See David Husom's biography in CSch 0150)

CSch 0156 PHOTOGRAPHY: ELECTRONIC IMAGING II. No credit, \$220 plus \$25 special fee. Total \$245 (age 62, \$198 plus \$25 special fee. Total \$223).

A continuation course on the high-end Dicommed Imaginator workstation. Students must be familiar with digital imaging on advanced workstations. Learn to produce very high resolution second generation original photographs. Emphasis will be on large format output for offset printing or darkroom. Additional lab time will be arranged. Prerequisite: Electronic Imaging I or consent of instructor. Materials are furnished. (Limited to 16)

Fall Spec Term, ★Sec 1, W, 6-10, Nov. 3-Dec. 1 (5 meetings), Dicommed, 11401 Rupp Drive, Burnsville. *No late fee through Oct. 27.*

Spring Spec Term, ★Sec 2, T, 6-10, May 3-31 (5 meetings), Dicommed (new address provided at registration). *No late fee through Apr. 26.*

(See David Husom's biography in CSch 0150)

CSch 0157 DICOMMED IMAGINATOR WORKSTATION WORKSHOP. No credit, \$190 plus \$25 special fee. Total \$215 (age 62, \$171 plus \$25 special fee. Total \$196).

Hands-on workshop on the high-end Dicommed Imaginator workstation. Learn how to manipulate, composite, and retouch photographs on professional advanced imaging equipment. Designed for photographers, designers, retouchers, and photo lab and pre-press professionals. Materials are furnished. (Limited to 16)

Winter Spec Term, ★Sec 1, F, 6-10, Mar. 4; Sa, 9 a.m.-5, Mar. 5; Su, 12-5, Mar. 6 (3 meetings), Dicommed (address provided at registration). *No late fee through Feb. 25.*

(See David Husom's biography in CSch 0150)

CSch 0158 OUTDOOR PHOTOGRAPHY. No credit, \$100 (age 62, \$90).

Capturing nature on film can be a fascinating challenge. Survey the basic techniques for photographing landscapes, close-ups, and wildlife in color. Additional topics include equipment selection, controlling natural light, and organizing and presenting your work. There will be one half-day field trip (May 7). Suggested text: *Nature Photography* by John Shaw. (Limited to 20)

Spring Spec Term, ★Sec 1, T, 7-9, Mar. 29, Apr. 12, 26, May 10, 24 (5 meetings plus field trip), CentLib 4, StP Campus. *No late fee through Mar. 22.*

(Don Breneman is a photographer for the Minnesota Extension Service and an associate professor in the College of Agriculture at the University of Minnesota. His work has been published in Minnesota Volunteer, Minnesota Calls, and Big Sky magazines as well as for calendars, brochures, and postcards)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

Noncredit Courses

CSch 0159 PHOTOGRAPHY: STUDIO LIGHTING. No credit, \$80 plus \$25 special fee. Total \$105 (age 62, \$72 plus \$25 special fee. Total \$97).

What's the difference between a cookie and a scrim? Finding out in a class that explores various ways that lighting is used to change the appearance of an object. Several techniques will be discussed including the use of tungsten and strobe equipment. The class will include demonstration and discussion. No equipment is necessary. Course is designed for those with a working knowledge of photographic fundamentals. (Limited to 15)

Winter Spec Term, ★Sec 1, Th, 6-8, Jan. 13-Feb.

17 (6 meetings), Dayton's Advertising Photography, 721 Harding Street N.E., Mpls (park in lot adjacent to Dayton's). *No late fee through Jan. 6.*

(Gary Ness earned a M.F.A. in photography from the University of Minnesota and is currently a commercial photographer at Dayton's Advertising Photography. He has extensive teaching experience and his work has been exhibited regionally and nationally, including at Film in the Cities Gallery, Peter M. David Gallery, and the Jon Oulman Gallery)

CSch 0160 BROADEN YOUR HORIZON: USING THE PANORAMIC CAMERA. No credit, \$80 (age 62, \$72).

Explore the history and current technology of the panoramic camera. Sort through the array of wide-angle cameras and processes available. The course opens with two introductory studio sessions, followed by two Saturday half-day field trips in urban and natural settings (Oct. 16, 23; participants provide own transportation and may choose to carpool). Follow-up studio sessions will introduce montage, assemblage, and experimental printing techniques. (Limited to 20)

Fall Spec Term, ★Sec 1, W, 6:30-8:30, Oct. 6-27

(4 meetings plus 2 field trips), meet in 2nd floor studio, 2800 Lyndale Ave. South, Mpls. *No late fee through Sept. 29.*

(Christ Faust is a design/media artist in the Space Science Center at the University of Minnesota, and an award-winning professional photographer, graphic designer, and 1992 McKnight Photography Fellowship recipient. His work has appeared in gallery exhibits and in local and national publications)

CSch 0163 SUCCESSFUL STRATEGIES FOR PHOTOGRAPHING PEOPLE. No credit, \$63 (age 62, \$56.70).

Photographers stimulate a reaction every time they point a camera at an individual. The reactions may be positive (a pleasant smile) or negative (a threatening gesture). What strategies can be used to elicit a desired response? This course is a "how to" approach to a

positive interaction between photographer and subject, be it in the portrait studio or on the street. It is designed for those who want to photograph people and would like to improve their ability to establish rapport and give direction. Some photography experience suggested, but darkroom skills are not required, as one-hour process labs will suffice. Equipment needed: 35mm adjustable camera, small detachable strobe, and tripod. Students will be asked to shoot one roll of film (either color or black and white) and have at least one print made for each class session. (Limited to 15)

Fall Spec Term, ★Sec 1, M, 6-8, Oct. 4-25 (4

meetings), JonesH 10. *No late fee through Sept. 27.*

(Tom Foley, principal photographer for University Relations at the University of Minnesota, has been a professional photographer for more than 21 years. Most of his work consists of photographing people)

CSch 0170 STUDIO ART PAINTING IN OILS AND ACRYLICS. No credit, \$107 (age 62, \$96.30).

For those interested in the enjoyment and technique of painting. Work on making personal ideas artistically satisfying by improving skills. Painting can be in acrylics or oils. Demonstrations, critiques, and discussions are included in class meetings. Instruction is varied to benefit the more advanced student as well as the beginner. Students should bring a sketch pad and pencil to the first meeting, when a more detailed list of required supplies will be given. (Limited to 20)

Fall Spec Term, ★Sec 1, M, 6:30-9, Sept. 27-Nov.

1 (6 meetings), ArtB 151. *No late fee through Sept. 20.*

(Louis Safer is a professor emeritus of art in the General College at the University of Minnesota. His work has been exhibited internationally and is included in the collection at the Smithsonian Portrait Gallery and the National Gallery in Finland)

CSch 0171 THE ART OF PORTRAITURE. No credit, \$107 (age 62, \$96.30).

Learn the basic steps in portrait painting. Disciplines in drawing, color, rendering, and creative interpretation, among others, will be covered so that the participant can acquire a firm foundation for portraiture. Work may be done in oils, acrylics, or pastels. Bring an inexpensive set of pastels and some sheets of newsprint to the first meeting. (Limited to 20)

Spring Spec Term, ★Sec 1, M, 6:30-9, Apr. 4-May

9 (6 meetings), ArtB 161. *No late fee through Mar. 28.*

(See Louis Safer's biography in CSch 0170)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSch 0172 PAINTING IN WATERCOLOR.

No credit, \$89 (age 62, \$80.10). The soft pastels of watercolor blend and flow to create a dreamlike image. Learn how textural effects, washes, and color combinations create moods in painting. Learn about the tools you need—paints, papers, brushes—through lectures, slides, and demonstrations of watercolor techniques. Practice these skills in painting sessions. Each painter receives individual attention to encourage creativity, and group critiques help to refine your skill. (Limited to 20)

Fall Spec Term, ★Sec 1, W, 6:30-9, Sept. 29-Oct. 27 (5 meetings), ArtB 161. *No late fee through Sept. 22.*

(Marija Skutans Netz is an award-winning watercolorist whose paintings appear in local galleries as well as in private and corporate collections. She has taught at the University of Minnesota and is a popular watercolor workshop leader and guest speaker)

CSch 0173 WATERCOLOR: IN SEARCH OF A PERSONAL STYLE. No credit, \$89 (age 62, \$80.10).

Experiment with some of the painting styles of contemporary watercolorists and develop awareness of your inner uniqueness as a source of creativity. This is a studio class; bring art supplies to the first session. Some experience with watercolor painting is desirable. (Limited to 20)

Spring Spec Term, ★Sec 1, T, 6:30-9, Apr. 5-May 3 (5 meetings), ArtB 161. *No late fee through Mar. 29.*

(See Marija Skutans Netz's biography in CSch 0172)

CSch 0174 CREATIVE DRAWING. No credit, \$84 (age 62, \$75.60).

Learn to use the creative part of your mind and to apply the principles of design to the art of drawing. Using your natural surroundings as subjects, tap your imaginative energy to produce line drawings with pencil, pen and ink, and charcoal. Learn the fundamentals of drawing and illustration for printing reproduction. Course is open to all levels of drawing skill. (Limited to 25)

Fall Spec Term, ★Sec 1, T, 7-9, Sept. 28-Nov. 2 (6 meetings), JonesH 10. *No late fee through Sept. 21.*

(Mary Kubik is an advanced graduate student in the Department of Design, Housing, and Apparel at the University of Minnesota)

CSch 0175 DRAWING YOUR LIFE . . . EVERYDAY. No credit, \$70 plus \$10 special fee. Total \$80 (age 62, \$63 plus \$10 special fee. Total \$73).

Use drawing journals to record the wonder and simple beauty around you—the backyard bird feeder, seasons of the year, remodeling of the kitchen, a visual diary of your children's lives. Use them to record travels or for a relaxing time-out project you give yourself each day. Drawing journals are a nonthreatening informal art form that uses sketching without the pressure of producing public art. Participants use basic drawing principles. Significant time will be spent drawing in class and there will be creative journal assignments. Class will include demonstrations on simple color techniques. (Limited to 20)

Winter Spec Term, ★Sec 1, W, 6:30-8:30, Jan. 12-Feb. 9 (5 meetings), BorH 365, StP Campus. *No late fee through Jan. 5.*

(Kris Kirkeby is a free-lance scientific illustrator. She also teaches natural science drawing to adults and children)

CSch 0178 INTERNATIONAL FOLK DANCING. No credit, \$74 (age 62, \$66.60).

Learn joyful, lyrical, rhythmic, and exciting dances from around the world. Each class session will cover basic folk dance steps and patterns as found in traditional dances from a variety of countries and cultures. In addition to becoming familiar with the dance itself, also learn historic and ethnographic background about each dance and its culture of origin. Finally, information about local folk dance sessions and workshops will be available to encourage participation in other community folk dance groups. Some of the specific folk dances you'll learn will be from Israel, Greece, England, America, Russia, Serbo-Croatia (Yugoslavia), Mexico, and Armenia or Turkey. This class is suitable for all ages and abilities; no previous dance experience is necessary. (Limited to 30)

Winter Spec Term, ★Sec 1, T, 7-8:30, Jan. 11-Feb. 22 (7 meetings), NorrisH 151. *No late fee through Jan. 4.*

(Barbara Loeb teaches in the University of Minnesota Dance Program and is also a body/movement therapist trained in several different therapies and techniques. She has performed and choreographed on the east and west coasts, was artist-in-residence at St. Olaf College for three years, and has studied folk dance in the U.S., Eastern Europe, England, and Greece)

Noncredit Courses

CSch 0179 THE ART OF COLOR: HAND-KNITTING IN THE NINETIES. No credit, \$71 (age 62, \$63.90).

The art of color handknitting has captivated the public, whether it be the trademark sweaters of the "Cosby Show" or the Kaffe Fassett shawl acquired by the Minneapolis Institute of Arts. Yet the combination of color and pattern has been an integral part of the handknitting tradition for over 2,000 years. Explore the evolution of color and patterning from Renaissance knitted silk waistcoats to Fair Isle jerseys to wearable knitted art of today. Lectures are complemented by technical instruction in color-knitting techniques and applied color and design theory. Basic-level knitting skills are necessary. (Limited to 25)
Fall Spec Term, ★Sec 1, Th, 6-8, Sept. 30-Oct. 28 (5 meetings), StCen 110, StP Campus. *No late fee through Sept. 23.*

(Pat Hemmis, an advanced graduate student in the Department of Design, Housing, and Apparel at the University of Minnesota, is researching the concept of "taste" in late 19th-century American life. Ms. Hemmis is a designer of wearable handknit art, some of which has been sold in the Twin Cities. She is a design historian and has taught knitting for the past 13 years)

CSch 0181 HANDKNITTING IN THE NINETIES: SWEATER DESIGN. No credit, \$71 (age 62, \$63.90).

Learn how the elements and principles of design can be applied to the handknit garment. Master the practical skills necessary to design a sweater, explore various approaches to the design process, and design and write a pattern for a garment during this course. Course designed for intermediate-level knitters. (Limited to 25)

Spring Spec Term, ★Sec 1, W, 10 a.m.-12, Apr. 6-May 4 (5 meetings), StCen 110, StP Campus. *No late fee through Mar. 30.*

(See Pat Hemmis's biography in CSch 0179)

CSch 0184 LEARNING TO WEAVE. No credit, \$141 (age 62, \$126.90).

Have you ever wanted to learn how to weave? Study with an accomplished master weaver in a fully equipped weaving studio. See slides and examples of a variety of textiles ranging from functional objects to textile art. Learn the anatomy of the loom and the basic tools of the trade. Basic design principles and processes, as they relate to woven design, will be covered. Weave small studies which explore color, design, structure, and yarn variables and a finished work which expresses your own world of ideas and experience. (Limited to 16)

Winter Spec Term, ★Sec 1, T, 10 a.m.-12:30, Jan.

11-Mar. 1 (8 meetings), McNH B16, StP

Campus. *No late fee through Jan. 4.*

(Lydia Kulesov, teaching specialist in the Department of Design, Housing, and Apparel, is an accomplished weaver and has exhibited widely at Perspectives Gallery, Rochester Art Center, and the Minneapolis Institute of Arts)

CSch 0186 DANCEABILITY JAM: A WORKSHOP IN ARTISTIC MOVEMENT FOR THE DIFFERENTLY ABLED. No credit, \$71 (age 62, \$63.90).

Join others of differing abilities in exploring the dance form of contact improvisation in a danceability jam. What is a danceability jam? It's a place where people gather together their knowledge, their curiosity, and their willingness to dance using contact improvisation. Working primarily through the sense of touch, people in and out of wheelchairs balance, lift, and support each other and create improvisational movement sequences. Most forms of dance partnership suppose that one partner leads, the other responds. With contact improvisation, however, either dancer may initiate or respond while remaining in touch with the other's body. This is the contact part of the form. The improvisational aspect of this dance arises from the continually changing relationships between partner and the floor. Open to nondisabled, physically disabled, and visually or hearing impaired people. No previous dance experience required. (Limited to 20)
Fall Spec Term, ★Sec 1, T, 7-9, Oct. 5-Nov. 9 (5 meetings—no class Oct. 19), NorrisH 151. *No late fee through Sept. 28.*

(Chris Aiken teaches in the Department of Theatre Arts and Dance at the University of Minnesota. He has practiced contact improvisation for over 10 years, including performances at the Festival of Improvisation and the Dance Theatre Workshop, both in New York City, and at the Forward Motion Series at the Walker Art Center)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSch 0190 HISTORIC MINNEAPOLIS: A WALKING TOUR. No credit, \$30 (age 62, \$27). Discover the historic city of Minneapolis. The tour begins at Nicollet Island Park on the south tip of the island and explores, in part, both the east and west banks of the Mississippi. Minneapolis has aggressively remodeled its core area, and though most of what it encompasses is less than 30 years old, this tour searches out visible remnants of the old city as well. The walk covers the Gateway district, the warehouse area, the core of downtown, and newer developments near Loring Park, with a stop midway for a break. Examine the forces that have transformed the downtown, and look at new and historic styles of architecture. Tour is two or three miles, so wear comfortable walking shoes. In case of inclement weather, the tour will be postponed to Saturday, May 28. (Limited to 25)

Spring Spec Term, ★Sec 1, Sa, 1-4:30, May 21 (1 meeting), meet at Nicollet Island Park. *No late fee through May 13.*

(Judith Martin is the coordinator of urban studies at the University of Minnesota. Her research interests include contemporary urban development and urban design, historic preservation, and urban history. She was the instructor for The Meanings of Place, an Independent Study television course, and has published articles on Twin Cities festival markets)

CSch 0191 ST. PAUL'S HISTORIC LOWERTOWN: A WALKING TOUR. No credit, \$30 (age 62, \$27).

From steamboats to railroads, St. Paul's Lowertown area has long been at the heart of the city's growth. The tour meets inside the main entryway of the Union Depot and proceeds with a brief slide presentation on Lowertown, a district on the National Register of Historic Landmarks. Lowertown began at the highest navigable point on the Mississippi River, a strategic site known as Lower Landing. The tour includes the landing as well as railroad sites which eventually overwhelmed the river trade and came to dominate the area's economic landscape. Study the area's architecture and learn of attempts to restore and preserve some of the historic integrity of the district. Midpoint during the tour we break (location to be announced). Wear comfortable walking shoes. In case of inclement weather, the tour will be postponed to Saturday, Oct. 23. (Offered in cooperation with the Ramsey County Historical Society. Limited to 25)

Fall Spec Term, ★Sec 1, Sa, 1-4:30, Oct. 16 (1 meeting), Union Depot, 214 East 4th Street (between Sibley and Wacouta). *No late fee through Oct. 8.*

(Vera Trent is the assistant director of the Ramsey County Historical Society, where she researches and writes brochures and produces exhibits and tours about the history of Ramsey County and St. Paul)

CSch 0192 ST. PAUL'S HISTORIC RAMSEY HILL: A WALKING TOUR. No credit, \$30 (age 62, \$27).

Discover the architectural styles and history of Ramsey Hill, one of St. Paul's most distinguished neighborhoods. Early residents were drawn to the hill because of the view it offered of the river valley and the city below. The Ramsey Hill area is an extension of Upper Town, which grew around the Upper Landing at the foot of Chestnut Street. Summit Avenue, a highlight of the area, is one of the best-known avenues in St. Paul, with its superb collection of diverse architectural styles from the late 19th and early 20th centuries. The tour meets at the Cathedral of St. Paul. Midpoint during the tour we break (location to be announced). Wear comfortable walking shoes. In case of inclement weather, the tour will be postponed to Saturday, Oct. 9. (Offered in cooperation with the Ramsey County Historical Society. Limited to 25)

Fall Spec Term, ★Sec 1, Sa, 1-4:30, Oct. 2 (1 meeting), meet at the Cathedral of St. Paul (corner of Summit and Selby Avenues). *No late fee through Sept. 24.*

(See Vera Trent's biography in CSch 0191)

CSch 0193 HISTORIC MINNEAPOLIS RIVERFRONT: A WALKING TOUR. No credit, \$30 (age 62, \$27).

Explore the riverfront around the birthplace of the Twin Cities, St. Anthony Falls. The tour starts and finishes at the fountains in front of Riverplace and will explore the east and west banks of the Mississippi River. The discovery of St. Anthony Falls by Father Hennepin in 1680 culminated in their use as a source of power for the early flour and lumber milling industries in Minneapolis. The Pillsbury "A" Mill, the earliest surviving mill still in operation, serves as a reminder of that period in history, as do the remnants of water outlets in the banks. The railroad has further shaped the landscape along the riverfront. These examples and other more recent attempts at revitalization of the riverfront area are visible and form a living history of the region. A break is taken midpoint along the tour. Wear comfortable walking shoes. In case of inclement weather, the tour will be postponed to Saturday, May 21. (Limited to 25)

Spring Spec Term, ★Sec 1, Sa, 1-4:30, May 14 (1 meeting), meet at Riverplace fountain. *No late fee through May 6.*

(Sandy de Montille, a graduate student in geography and urban studies at the University of Minnesota, has researched several projects for the Center for Urban and Regional Studies. These publications form part of her wider interest in the study of urban places, the people and processes which produce them, and in the Twin Cities, the influence of the river on the landscape)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

Noncredit Courses

CSch 0194 HISTORIC LOWRY HILL: A WALKING TOUR. No credit, \$30 (age 62, \$27).

Explore historic Lowry Hill in Minneapolis, the location of some of the city's most notable architecture and art institutions. The tour begins at 15 Groveland Terrace in the front entry port of the former Nott Mansion designed by Long & Keys (who also designed Minneapolis City Hall.) A presentation in the old living room of the Nott Mansion will cover the history and planning of the area. The walking tour will then visit historic buildings, modern residences, and reflect on the influence of the Guthrie Theater, Walker Art Center, and the Sculpture Garden on the Lowry Hill area. Wear comfortable walking shoes. Midpoint in the tour we will take a break (location to be announced). In case of inclement weather, the tour will be postponed to Saturday, Oct. 9. (Limited to 20)
Fall Spec Term, ★Sec 1, Sa, 1-4:30, Oct. 2 (1 meeting), meet in front of 15 Groveland Terrace, Mpls. *No late fee through Sept. 24.*

(Edward Kodet has been an adjunct associate professor of architecture as well as a design critic at the University of Minnesota. He has won several design awards, written articles for numerous architectural journals, and serves as president of Kodet Architectural Group, a firm known for its design and work in historic restoration)

CSch 0196 BEHIND-THE-SCENES AT MUSEUMS. No credit, \$76 (age 62, \$68.40).

Have you ever wondered what happens behind-the-scenes at a museum? Each week meet at a different museum in the Twin Cities and receive a behind-the-scenes tour led by museum staff. Gain an understanding of the operation of various museum departments, including administration, curatorship, education, exhibit design, and visitor studies. Explore the history and philosophy of different museums, including the Science Museum of Minnesota, Minneapolis Institute of Arts, and the Minnesota Historical Society History Center. The first class meets in the foyer of the American Swedish Institute. List of other museum site visits will be distributed at the first class session. (Limited to 20)

Winter Spec Term, ★Sec 1, W, 10 a.m.-12, Jan. 19-Feb. 16 (5 meetings), American Swedish Institute (Jan. 19 only), 2600 Park Ave. South, Mpls. *No late fee through Jan. 12.*

(Jane Marie Litwak is completing a Ph.D. in educational psychology and museum studies at the University of Minnesota. She has worked at museums in New York, California, and the Midwest. Her area of expertise is visitor studies)

History, Philosophy, Humanities, Etc.

CSch 0200 THE LEGACY OF JFK: CAMELOT 30 YEARS LATER. No credit, \$63 (age 62, \$56.70).

"Ask not what your country can do for you, ask what you can do for your country." It has been over 30 years since President John Fitzgerald Kennedy uttered those famous words. While his administration lasted less than three years, his legacy and popularity is stronger today than when he was president. Why has John F. Kennedy had a lasting impact on American culture? How have society, the media, and scholars judged JFK and Camelot during the last three decades? While Kennedy remains a hero, there are many negative books and articles about his character and policies. How have they affected Camelot? Explore the Kennedy years—what happened and how those policies and events impact society today. Discuss what the infatuation with JFK and Camelot says about our culture and society. (Limited to 40)

Fall Spec Term, ★Sec 1, M, 6-8, Nov. 1-29 (4 meetings—no class Nov. 15), St. Anthony Park Library, 2245 Como Ave., StP. *No late fee through Oct. 25.*

(David Woodard is an instructor and doctoral candidate in the Department of History at the University of Minnesota. He has been a student of JFK and Camelot for 20 years and taught a Compleat Scholar class on the Kennedy assassination)

CSch 0201 THE SUPREME COURT: PROPER MAKER OF PUBLIC POLICY? No credit, \$74 (age 62, \$66.60).

The Supreme Court is probably the least understood, yet in some ways the most influential, branch of the federal government, and for 200 years has been an essential instrument of public policy. Assigned by the Constitution to interpret laws and legal language in the context of both initial meaning and intent and current societal demands, the justices often exercised their prerogative in political ways with controversial results. Learn more about this appointive judicial body, its operations, procedures, and its central role in our political power structure.

Fall Spec Term, Sec 1, M, 6-8, Oct. 4-25 (4 meetings), FordH 50. *No late fee through Sept. 27.*

(Paul L. Murphy is regents' professor of American history at the University of Minnesota. His numerous books and articles, including The Constitution in Crisis Times and World War I and the Origins of Civil Liberties, helped shape American constitutional history and particularly the history of civil liberties and civil rights in the United States)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSch 0203 BALKAN MADNESS. No credit, \$84 (age 62, \$75.60).

Explore and understand the immense changes in Europe today: the sources of the conflict in Yugoslavia; Russia and Eastern Europe after the revolutions; the new right in Germany and elsewhere; the chances for democracy and harmony in Europe; and events as they happen during the period of this course.

Fall Spec Term, Sec 1, T, 6-8, Sept. 28-Oct. 26 (5 meetings), FordH 349. *No late fee through Sept. 21.*

(Richard L. Rudolph is a professor in the Department of History at the University of Minnesota. He has traveled widely and has written and lectured about European history)

CSch 0204 NATIONALISM AND RACISM IN EUROPE: PAST, PRESENT, AND FUTURE.

No credit, \$98 (age 62, \$88.20).

Nationalism has been called the most important force in modern history. Where does it come from? Is it psychological, religious, political? This course will use lectures, film, and literature to explore the causes and history of nationalism, racism, and anti-Semitism in western and eastern Europe. (Offered in cooperation with the Woman's Club of Minneapolis. Limited to 50)

Winter Spec Term, ★Sec 1, M, 10 a.m.-12, Jan. 24-Feb. 28 (6 meetings), Woman's Club of Mpls, 410 Oak Grove. *No late fee through Jan. 18.*

(See Richard L. Rudolph's biography in CSch 0203)

CSch 0205 MARX IS DEAD: ARE HIS IDEAS?

No credit, \$92 (age 62, \$82.80).

The collapse of the Soviet Union and the disintegration of the Communist states of Eastern Europe historically followed the collapse of Stalinism. For many, this confirmed that contemporary Marxism as a whole was no longer a viable ideology or world view. Should these momentous world events make us further conclude that we have nothing at all to learn from, or to be challenged by, the writings of the "first Marxist," Karl Marx? This course will try to answer this general question by reading and discussing some of Marx's most important writings. His conceptions of life and labor, alienation and religion, technology and change, as well as his better known conceptions of communism and economics, will be submitted to close scrutiny. A wide range of participants' views will be welcomed and encouraged. Course reading: David McClellan, ed., *Karl Marx: Selected Writings*.

Spring Spec Term, Sec 1, W, 6-8, Apr. 6-May 4 (5 meetings), FordH 60. *No late fee through Mar. 30.*

(James Farr is a professor in the Department of Political Science at the University of Minnesota. He

teaches and writes in the area of political theory and the history of political thought. He has authored a number of essays on the ideas of Karl Marx and co-edited (with Terence Ball) After Marx)

CSch 0206 RUSH LIMBAUGHT TO MALCOLM X: CONTEMPORARY POLITICAL VOICES.

No credit, \$78 (age 62, \$70.20).

Rush Limbaugh (*The Way Things Oughta Be*), Susan Faludi (*Backlash*), Al Gore (*Earth in the Balance*), and Malcolm X (*The Autobiography of Malcolm X*) are four Americans whose ideas have recently commanded wide popular attention. Their popularity suggests that, while not exhaustive of all perspectives, their ideas speak to the experience of many. Questions discussed include: Should government regulate relations between men and women, insure safe habitats for owls, or eliminate social injustice? The goal is to better understand the views expressed in the works and your own ideological dispositions as responses to them. (Limited to 25)

Spring Spec Term, ★Sec 1, T, 6-8, Apr. 5-May 3 (5 meetings), FordH 70. *No late fee through Mar. 29.*

(Ron Steiner is a Ph.D. candidate in political science at the University of Minnesota. His interests include political philosophy and political ideologies in modern societies)

CSch 0207 ECONOMICS WITHOUT EXAMS.

No credit, \$102 (age 62, \$91.80).

What everyone wants to know about economics without having to take exams. An introduction to some elementary economic principles and the problems of applying them in our nation's current economic situation. Confront briefly problems Washington must grapple with at length, such as unemployment, inflation, taxes, government spending, the deficit and the debt, import competition, social security, and urban conditions. Similar brief treatment will be given to labor problems, some business problems, and consumer problems such as personal finance. There will be ample opportunity for questions and discussion in connection with each lecture, so you should learn something but not everything about how to improve your personal economy and the national economy. Reading material and references will be offered but not required.

Fall Spec Term, Sec 1, W, 6-8, Sept. 29-Nov. 10 (6 meetings—no class Nov. 3), HHHctr 30. *No late fee through Sept. 22.*

(Harlan M. Smith is a professor emeritus of economics at the University of Minnesota, where he teaches a wide variety of courses on economics and social philosophy. He has taught at the University since 1950)

CSch 0208 WHERE IS OUR NATION HEADED? A DISCUSSION GROUP. No credit, \$68 (age 62, \$61.20).

This discussion course will compare our ideas about what is going to happen to this nation. We will examine the bases for our projections about the future. What forces do we see at work? Where may they be taking us? Is there any consensus on whether that is where we want to go? Is there any ground on which consensus could develop? What could be done if there is a need to change directions in some respects? Who could do what to help? We will share our thinking about these matters, get some others' ideas on what might be done, and so some constructive thinking ourselves on what to do. (Limited to 30)

Spring Spec Term, ★Sec 1, W, 10:15 a.m.-12:15, Apr. 6-27 (4 meetings), Walker Library, 2880 Hennepin Ave. South, Mpls. *No late fee through Mar. 30.*

(See Harlan M. Smith's biography in CSch 0207)

CSch 0209 THE ETERNAL WARRIOR: PERSONAL ACCOUNTS OF BATTLE. No credit, \$80 (age 62, \$72).

"The zone of sudden death" sets the combat veteran apart from those outside it. The experience of war—the spiritual, psychological, as well as physical challenges of fighting—has been a universal human event. Facing danger and fear on the battlefield has changed little from Xenophon and Julius Caesar's day to the World Wars, Korea, and Vietnam. By looking at memoirs, poetry, and depictions of the combat experience by actual fighting soldiers from 431 B.C. to the present, confront the profound effect war has had on the veteran. Explore the points of union with, and alienation from, civilian society that the experience of battle can bring.

Fall Spec Term, Sec 1, T, 6-8, Oct. 19-Nov. 16 (5 meetings), Washburn Library, 5244 Lyndale Ave. South, Mpls. *No late fee through Oct. 12.*

(Christopher Simer, an award-winning teacher, is a Ph.D. candidate in history at the University of Minnesota with a special interest in military affairs)

CSch 0210 CHANGE IN RURAL MINNESOTA. No credit, \$74 (age 62, \$66.60).

Many city people cherish romantic myths about rural areas, but rural Minnesota, like the old gray mare, ain't what it used to be. Farming has changed dramatically. The small towns that once served the farm population have become minor manufacturing centers. In northern Minnesota mining areas are hurting, but forestry and lakeshore resort-and-retirement areas

seem to have stabilized. The demographic composition of the rural population is changing, and some parts of the state face severe demographic stress. Through lecture and discussion learn about the changing face of rural Minnesota. (Offered in cooperation with the Woman's Club of Minneapolis. Limited to 60)

Fall Spec Term, ★Sec 1, Th, 10 a.m.-12, Oct. 7-28 (4 meetings), Woman's Club of Mpls, 410 Oak Grove. *No late fee through Sept. 30.*

(John Fraser Hart is a professor of geography at the University of Minnesota. He has published several books and many articles about rural areas in the United States)

CSch 0211 MANOOMINIKEWIN: STORIES OF WILD RICING. No credit, \$49 (age 62 and MHS members, \$44.10).

Manoominikewin (Ojibwe for "making wild rice"), the traditional harvest and preparation of the grains of a wild aquatic grass, is a simple human activity. The process involves a boat, a harvester, and two small sticks, and is still used by Dakota, Ojibwe, Menominee, and Winnebago people much as their ancestors did 500 years ago. This grain is also commercially cultivated. Processed in factories, packaged in plastic bags, and sold in supermarkets throughout the country, this "cultivated wild rice" is an emblem of a profound historical change. Between these two simple grains—one ancient, one modern—lies a story with complex human dimensions. Learn the history of wild rice, its influence on American Indian culture, and its historical development as a natural resource food source. Take a look at commercial rice paddy development and the eventual dominance of the contemporary "wild rice" market. Visit the exhibit at the Minnesota History Center and see slide and video presentations. Course will include a reading list and bibliography. (Offered in cooperation with the Minnesota Historical Society. Both MHS and Compleat Scholar will accept registrations. Limited to a combined total of 40)

Fall Spec Term, ★Sec 1, Th, 6-8, Sept. 30-Oct. 14 (3 meetings), Minnesota History Center, Classroom 1, 345 Kellogg Blvd. West, StP. *No late fee through Sept. 23.*

(Ron Libertus, a Leech Lake Ojibwe, is a lecturer in the Department of American Indian Studies at the University of Minnesota)

CSch 0212 A COMMON GROUND: MINNESOTA COMMUNITIES. No credit, \$81 (age 62 and MHS members, \$72.90).

What is community? How have we defined and formed communities, and how can we develop and nurture diverse communities in Minnesota in the future? Focus on these questions using readings on community and the Minnesota Historical Society's new exhibit on, among others, the deaf, the Vietnam vet, the Isanti County Swedish, and the rural Chokio and Winnebago Indian communities. Guest speakers from some of the groups represented in the exhibit will also present their views. (Offered in cooperation with the Minnesota Historical Society. Both MHS and Compleat Scholar will accept registrations. Limited to a combined total of 40)

Winter Spec Term, ★Sec 1, Th, 6-8, Jan. 6-Feb. 3, (5 meetings), Minnesota History Center, Classroom 1, 345 Kellogg Blvd. West, StP. *No late fee through Dec. 30.*

(Carol Ryan earned her Ph.D. in American studies at the University of Minnesota. Her dissertation topic was "Summering: Everyday Life in a Vacation Community." She is currently an associate professor at Metropolitan State University)

CSch 0213 ESTRANGED BEDFELLOWS: FREEDOM OF THE PRESS AND GOVERNMENT. No credit, \$78 (age 62, \$70.20).

The definition of a free press is neither unchanging nor universal. How, for example, could Soviet leaders argue during the Cold War that the Soviet press enjoyed more freedom than its U.S. counterpart? How have Americans reconciled censorship laws with the First Amendment, which guarantees press freedom? Examine the relationship between political ideologies and news media across both time and cultures. Consider how changes in political thinking and different conceptions of citizenship lead to divergent expectations and demands on the media and important misperceptions about the meaning of a "free press."

Winter Spec Term, Sec 1, T, 10 a.m.-12, Jan. 25-Feb. 22 (5 meetings), MacP. *No late fee through Jan. 18.*

(Sheryl Breen, a former newspaper reporter and editor, is a Ph.D. student in the Department of Political Science at the University of Minnesota)

CSch 0214 PEACE AND WAR IN THE NEW WORLD ORDER. No credit, \$78 (age 62, \$70.20).

Dramatic changes in world politics have revived an age old problem: how to control international competition, both economic and military, in an environment that is no longer dominated by two superpowers. Concentrating on Europe, the Middle East, and the countries of the former Soviet Union, examine the formation of regional power blocks and how these reflect cultural and political ties between nations. Discover the historical roots of present and potential areas of conflict between and within regions. Explore the roles ethnic division, religious difference, economic rivalry, and technological advantage play in provoking (or perhaps limiting) international conflict. How will Westerners—especially Americans—be affected by regionalism in the rest of the world? Will it be possible to manage conflicts to provide long term stability or are we doomed to a world filled with "Bosnias" and "Desert Storms"?

Spring Spec Term, Sec 1, M, 10 a.m.-12, Apr. 4-May 2 (5 meetings), MacP. *No late fee through Mar. 28.*

(Edward Schoenfeld is an advanced graduate student in the Department of History at the University of Minnesota. He has studied world politics and the role of warfare and peacemaking in human society for 12 years)

CSch 0215 IRISH URBAN LIFE: A CULTURAL PERSPECTIVE. No credit, \$68 (age 62, \$61.20).

With the publication of James Joyce's *Ulysses*, Dublin became a world city of the literary imagination. But Dublin is only one of many Irish cities that are rich in their unique cultural, architectural, and historical traditions. Examine Dublin, Belfast, and Cork by exploring the people, places, and historical events that have made them endearing and intriguing cities. Special attention will be given to how Irish writers described each city and their political, social, and historical context. Extensive use of slides will supplement each lecture.

Spring Spec Term, Sec 1, F, 10:15 a.m.-12:15, Apr. 8-29 (4 meetings), Linden Hills Library, 2900 West 43rd St., Mpls. *No late fee through Apr. 1.*

(David Rafter has lived and taught urban studies in Ireland as a Fulbright visiting professor at University College Cork and as a senior research fellow at Queen's University of Belfast. He is a professor of urban studies at Mankato State University and has been an adjunct professor at the University of Minnesota Humphrey Institute)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

Noncredit Courses

CSch 0216 IN SEARCH OF LITTLE CROW: THE 1862 MINNESOTA-DAKOTA CONFLICT.

No credit, \$66 plus \$8 special fee. Total \$74 (age 62, \$59.40 plus \$8 special fee. Total \$67.40).

An in-depth look at Little Crow, the courageous Mdewakanton Dakota leader who was, perhaps, one of Minnesota's first patriots. Explore personal aspects of his life, such as family history, his wives (four of whom were sisters and are relatives of the instructor), his role in treaty negotiations with the U.S., his death, and his many descendants. A major focus is his role as a primary leader of the Dakota against U.S. military forces during the Minnesota-Dakota Conflict of 1862. Discuss cultural aspects of the Dakota people and contemporary aspects such as the "Year of Reconciliation" (1987). A second part of the course is a full-day guided bus tour (**Saturday, Oct. 9**) with Native Routes, American Indian History Bus Tour, which introduces major sites in Dakota history: Fort Snelling, Traverse des Sioux, Mankato Hanging Site, and the contemporary Shakopee Mdewakanton Reservation at Mystic Lake. Includes a talk with a tribal representative at Mystic Lake. Meet at 7:45 a.m. at the Fort Snelling Overlook parking lot; bus departs promptly at 8 a.m. Tour stops for box lunch at Mystic Lake Community Center at about 1:30 p.m. Participants may choose to bring a snack to eat on the bus. Bus returns to Fort Snelling at approximately 4 p.m. Full tour schedule available upon request. Tuition includes lecture, transportation, materials, and box lunch. Recommended text: *Little Crow, Spokesman for the Sioux* by Gary Clayton Anderson. (Limited to 40)

Fall Spec Term, ★Sec 1, Th, 6:30-8:30, Oct. 7 (1 meeting plus field trip), FordH 70. *No late fee through Sept. 30.*

(*Gary Cavender, instructor and guide, is a Wahpeton-wan [or Wahpeton, meaning "Dwellers in the Leaves"] Dakota from the Minnesota Upper Sioux Community. He is a teaching associate in American Indian studies at the University of Minnesota and well versed in the folklore, legends, and oral traditions of the Dakota people*)

CSch 0218 THE WHO, HOW, AND WHY OF ONCE UPON A TIME: THE ART OF STORYTELLING. No credit, \$65 (age 62, \$58.50).

Every culture has a storytelling tradition. People in ancient civilizations told stories. Twentieth-century people use radio, TV, and videos to tell stories. Trace storytelling through history and learn the many methods people have used to tell stories. Examine some of the traditional roots of storytelling such as original myths, legends of tribal rule, and wisdom tales. Take a look at your family stories. Discover who in your family is the storyteller. Includes lecture, discussion, and telling of stories. (Limited to 25)

Fall Spec Term, ★Sec 1, T, 10:15 a.m.-12:15, Oct. 5-26 (4 meetings), St. Anthony Park Library, 2245 Como Ave., StP. *No late fee through Sept. 28.*

(*Warren Gore is an associate professor in the Department of Rhetoric at the University of Minnesota*)

CSch 0230 PHILOSOPHICAL REFLECTIONS ON FEMALE FRIENDSHIPS. No credit, \$80 (age 62, \$72).

"We are like the twins in old fables, each of whom has been given half a key," states a Margaret Atwood character, which reminds readers of how intimate and intertwined women's lives can become through friendships. Our female friendships can be one of the most sustaining and constant aspects of our lives, but stormy and challenging as well. Although friendships evolve over time and change as we mature and age, the need for a good friend never leaves us. Through readings like Toni Morrison's *Sulu*, Paula Sharp's *The Woman Who Was Not All There*, and others, consider these questions: What is the nature of female friendship? What sorts of responsibilities, cares, and boundaries are part of a good friendship? What are the qualities of a good friend? What enables some women to sustain their friendships through conflicts and differences? Through fictional and philosophical accounts of friendship, explore the bonds, struggles, and strengths of female friendship. (Limited to 40)

Spring Spec Term, ★Sec 1, Th, 1-3, Apr. 7-May 5 (5 meetings), Walker Library, 2880 Hennepin Ave., Mpls. *No late fee through Mar. 31.*

(*Nancy Potter is a doctoral candidate in the Department of Philosophy at the University of Minnesota. She specializes in moral and political philosophy, and her research includes the analysis of representations and realities of women's relationships*)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSch 0231 THE NATURE OF JUSTICE: PLATO'S GORGIAS AND REPUBLIC. No credit, \$63 (age 62, \$56.70).

What is the nature of justice? What are the rewards for treating others justly? Should personal benefit or interest guide beliefs regarding justice? Is Plato correct in his argument that acting justly is its own reward? Through reading, lecture, and discussion, explore Plato's beliefs concerning justice (through his protagonist Socrates) in two dialogues: the *Gorgias* and the *Republic*. In *Gorgias*, Socrates defends his views against Callicles, who argues that pursuit of pleasure is always more rewarding, regardless of the harm it may or may not cause others. In the *Republic*, Thrasymachus argues that the pursuit and acquisition of political power, by just or unjust means, is the greater reward. Determine for yourself how these philosophies of justice relate to modern day views of justice. (Limited to 25)

Winter Spec Term, ★Sec 1, T, 6-8, Feb. 1-22 (4 meetings), FordH 70. *No late fee through Jan. 25.*

(Del Reed is a Ph.D. candidate in the Department of Philosophy at the University of Minnesota. He has studied ancient philosophy for over 10 years)

CSch 0232 REDEFINING SPIRITUALITY: WOMEN AND AMERICAN RELIGION. No credit, \$84 (age 62, \$75.60).

For the last 20 years, women have actively engaged in redefining their spiritual needs and offering a critique of established religion. Women have chosen a variety of approaches to religious belief and practice. Some have attempted to make traditional religious organizations more responsive to the needs of women by working from within. Others have stepped outside traditional religion in their search for a spiritual center that meets their particular needs. Look at a range of women's responses to religion in contemporary America. Discuss the belief structure of some major religious organizations in America and how women have worked to make them responsive to their needs. Look at the role of women in the clergy, the nature of god language and liturgy, and the concept of the divine. Also, examine some of the alternatives to traditional religion that women have chosen. Representatives of the clergy will be invited to participate in some of the discussions.

Winter Spec Term, Sec 1, W, 6-8, Jan. 12-Feb. 9 (5 meetings), FordH 70. *No late fee through Jan. 5.*

(Billie Wahlstrom heads the Department of Rhetoric at the University of Minnesota. She is the former director of the Program for the Study of Men and Women in Society at the University of Southern California. She has written extensively on the topics of women and communication)

CSch 0235 WHY DID THEY KILL SOCRATES? No credit, \$53 (age 62, \$47.70).

For centuries Socrates has been viewed as a paragon of nobility—a self-sacrificing teacher who gave his life for the sake of his noble ideals and ideas. But was it that simple? Recent investigations have given some new perspectives. Examine the standard accounts, view a dramatization of the trial and execution, and consider some alternate views. This will not be a “bash Socrates” course, but it will attempt to demonstrate that politics and history can be and usually are more complicated and multidimensional than the stereotyped views that are so commonly accepted.

Winter Spec Term, Sec 1, W, 10:15-12:15, Jan. 12-26 (3 meetings), Walker Library, 2880 Hennepin Ave. South, Mpls. *No late fee through Jan. 5.*

(Gerald Erickson, a professor in the Department of Classical and Near Eastern Studies at the University of Minnesota, is interested in the cultural facets of antiquity)

CSch 0237 PHILOSOPHY OF SELF AND CONSCIOUSNESS. No credit, \$78 plus \$3 special fee. Total \$81 (age 62, \$70.20 plus \$3 special fee. Total \$73.20).

The relationship of consciousness to brain remains an unsolved mystery within both philosophy and science. What is consciousness, and what is its function? Is it nonphysical? What makes a person “a person”? Is self-knowledge possible? Examine some recent philosophical theories of personality, thought, intelligence, self, and consciousness. Learn connections and relations between brain processes, consciousness, and personality.

Winter Spec Term, Sec 1, Th, 6-8, Jan. 27-Feb. 24 (5 meetings), FordH 50. *No late fee through Jan. 20.*

(Kamuran Godelek is a doctoral candidate in philosophy at the University of Minnesota. Her dissertation is on the philosophy of psychology. She holds two master's degrees, one in philosophy and the other in psychology)

Noncredit Courses

CSch 0240 IMAGES FROM OUR PAST: SACRED SITES AND SANCTUARIES. No credit, \$80 (age 62, \$72).

Explore sacred sites and sanctuaries in the Old World and the New. Survey Old World history from the temples of antiquity to synagogues and cathedrals built in the Middle Ages to buildings constructed at the time of emigration to the New World. Learn how places of worship built by New World immigrants reflect the builders' heritage, values, and aspirations by studying, among others, Native American worship sites and buildings constructed to accommodate Old World traditions in a new environment. Examine current trends in religious architecture. Concluding lecture will focus on sacred sites and sanctuaries in Minnesota, particularly in the Twin Cities. (Limited to 25)

Spring Spec Term, ★Sec 1, T, 6:15-8:15, Apr. 5-May 3 (5 meetings), NCCCE Library. *No late fee through Mar. 29.*

(Marilyn J. Chiat is an adjunct faculty member of the Jewish Studies Center at the University of Minnesota and co-director of the Center for the Documentation and Preservation of Places of Worship. The recipient of a Ph.D. in art history, her area of interest is religious art and architecture with a specialty in the synagogue, a topic on which she has written widely)

CSch 0242 WHO WILL LIVE: ETHICAL DILEMMAS IN HEALTH CARE DECISIONS. No credit, \$54 (age 62, \$48.60).

Should 80 percent of the health care dollar be spent treating individuals during the last six months of life, as is now the case? Should new reproductive and genetic technologies be used in conception of high-risk infants who will survive only with great difficulty? Should intensive care for the dying come before improved care for the vast majority of ailments we experience between infancy and old age? How should we as individuals and as a society make decisions about health care at the beginning and end of a person's life? Explore how ethicists think about issues such as patient autonomy, the philosophy of "do no harm," and justice. Examine beginning-of-life issues such as who are a child's "real" parents (egg donor, sperm donor, surrogate mother, social parents) and end-of-life issues such as sustaining treatment and what to expect of the medical system in terminal illness. (Limited to 30)

Fall Spec Term, ★Sec 1, W, 6:15-8:15, Oct. 13-27 (3 meetings), Arch 50. *No late fee through Oct. 6.*

(Dianne Bartels is the associate director of the Center for Biomedical Ethics. She has an M.A. in nursing and her interests include patient-professional relationships, health care decision making, ethical issues in reproductive technologies, and humane care of the dying)

CSch 0243 HOME ALONE. No credit, \$65 (age 62, \$58.50).

A recent film devoted to a child accidentally left behind by his vacationing family (much as an article of clothing might be forgotten) was so successful that a sequel was promptly produced. Both of these films were comedies. Last year, a couple returning from a Mexican vacation was arrested after authorities learned that they had left their two young children home alone. But the abuse is not confined to children. The abandonment of elderly relatives has become so common that our language now has a new term, "granny dumping." This three-session course will consist of lecture and discussion about the social and ethical consequences of literally and figuratively abandoning family members. Readings will include essays by Wendell Berry and selections from *Code Blue*, a 1990 study of the status of the health of our young. Participants will be encouraged to speak from their own experience and to share any solutions they have used in their own lives. Designed to allow time for a thoughtful consideration of ideas and for the evolution and development of a personal viewpoint about these important issues. (Limited to 25)

Fall Spec Term, ★Sec 1, W, 6-8:30, Sept. 29, Oct. 20, Nov. 10 (3 meetings), FordH 365. *No late fee through Sept. 22.*

(John Dolan is an associate professor in the Department of Philosophy and co-chair of the Program in Human Rights and Medicine at the University of Minnesota)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSch 0244 FISHING RIGHTS, ECONOMIC EXPANSION, OLD GROWTH FORESTS: ETHICS IN NATURAL RESOURCE MANAGEMENT. No credit, \$62 (age 62, \$55.80).

In the 1990s Minnesota public officials will make important policy decisions about the use of the state's natural resources. These decisions involve issues such as the protection of hunting and fishing rights for Native Americans, development of a Generic Environmental Impact Statement (GEIS) for timber harvesting, potential expansion or relocation of the Minneapolis-St. Paul International Airport, and the growing public demand for recreational opportunities in relation to a growing outcry to preserve natural areas. These issues are complex and have at their core important ethical questions: What are our obligations to future generations? What is our obligation to preserve the resource? And what is our obligation to respond to public demand for recreation and economic development? Examine these issues and the ethical questions they raise. (Limited to 30)

Winter Spec Term, ★Sec 1, M, 6:15-8:15, Jan. 24-Feb. 14 (4 meetings), Arch 45. *No late fee through Jan. 18.*

(Ron Nickerson is a park planner with the Minnesota Department of Natural Resources and a graduate student in the Department of Forest Resources. He was a staff person with the Minnesota House of Representatives Appropriations Committee from 1987 to 1991)

CSch 0250 THE MEDIA AND MENTAL ILLNESS. No credit, \$81 (age 62, \$72.90).

Over 20 percent of the present adult population will experience at least one episode of diagnosable mental illness at some point in their lives. Learn about schizophrenia and how it differs from multiple personality disorder. What is a psychopath? What is a borderline personality disorder? How is mental illness portrayed in popular culture? Read short stories about schizophrenia, depression, and post traumatic stress disorder and view clips of the films *Fatal Attraction*, *Bad Influence*, and *The Fisher King* to learn about mental illness, to distinguish fact from fiction, and to remove the stigma of mental illness.

Spring Spec Term, Sec 1, Th, 6-8, Apr. 7-May 5 (5 meetings), Phys 166. *No late fee through Mar. 31.*

(Diane Gooding, an advanced graduate student in clinical psychology, has taught courses in abnormal psychology and worked as a psychology intern at Hennepin County Medical Center, where she conducted therapy and diagnostic assessments. She is an avid film buff and enjoys short fiction)

CSch 0251 UNDERSTANDING HUMAN SEXUAL BEHAVIOR. No credit, \$72 (age 62, \$64.80).

How does age affect your sexuality? Do you have difficulty talking about sex? This course sheds light on the nature of our sexual selves from the womb all the way to the end. Learn sound attitudes about sexuality and skills to improve communication with your partner. Includes discussion of health problems and AIDS awareness. (Limited to 30)

Fall Spec Term, ★Sec 1, T, 6-8, Oct. 5-26 (4 meetings), Phys 157. *No late fee through Sept. 28.*

(Gerhard Neubeck, professor emeritus in the Department of Family Social Science at the University of Minnesota, has 45 years of experience in marriage and family therapy. He currently writes book reviews for the Minneapolis Star and Tribune, gives lectures on sex and aging, and maintains a membership in the American Association of Marriage and Family Therapists)

CSch 0252 RITES OF PASSAGE FOR LIFE'S TRANSITIONS. No credit, \$90 (age 62, \$81).

The rites of passage which have been so important in marking the individual's movement from one stage of life to another in tribal societies are largely absent in our own. Examine the phenomenon of initiation cross-culturally and from the perspective of depth psychology. Readings and discussion will focus on modern passages, from childhood through old age, and the possibilities of enriching our own transitions through the recognition and creation of appropriate rites of passage. Women's experiences will be emphasized. (Limited to 25)

Winter Spec Term, ★Sec 1, T, 6-8, Jan. 11-Feb. 8 (5 meetings), Phys 157. *No late fee through Jan. 4.*

(Jennette Jones, Ph.D., a psychotherapist in private practice, is in the final stage of training as a Jungian analyst)

Noncredit Courses

CSch 0253 FUNDAMENTALS OF JUNGIAN PSYCHOLOGY. No credit, \$90 (age 62, \$81).

How can we best relate to the guides, the saboteurs, the wild animals, and the lovers within? How can we recognize and live with our complexes, understand our dreams, and tap the creative potential at the deep archetypal layers of the psyche? Focus on these and other topics in the psychology of C.G. Jung, the brilliant Swiss psychiatrist who—perhaps better than anyone else in the 20th century—explored the symbolic foundations of the human psyche. In addition to selected readings (optional), examine fairy tales, pop culture, political events, and personal experience as illuminated by the central concepts of Jungian psychology. (Limited to 25)

Spring Spec Term, ★Sec 1, T, 6-8, Apr. 5-May 3 (5 meetings), Phys 143. *No late fee through Mar. 29.*

(See *Jennette Jones's biography in CSch 0252*)

CSch 0254 DREAM WORK: A JUNGIAN APPROACH. No credit, \$90 (age 62, \$81).

We all dream, but most of us need guidance in using our dreams as a source for inner strength and wisdom. Our text, *The Wisdom of the Heart* by psychologist and Jungian analyst Karen Signell, points us to the self, the shadow, inner aggression, relationships, and inner wisdom in our dreams. Brief lectures and class discussion will focus on the way these ideas illuminate our own dream experiences, while the last half of each class session will be devoted to working on a dream of a class member using Jungian principles of dream interpretation. (Limited to 25)

Spring Spec Term, ★Sec 1, W, 10 a.m.-12, Apr. 6-May 4 (5 meetings), Lutheran Church of the Good Shepherd, Red Lecture Room, 4801 France Ave. South, Edina (park in and enter from lot south of Church). *No late fee through Mar. 30.*

(See *Jennette Jones's biography in CSch 0252*)

CSch 0280 LOOKING GOOD: THE POLITICS OF HEALTH AND BEAUTY. No credit, \$65 (age 62, \$58.50).

Contemporary definitions of women's health are linked to cultural assumptions about beauty, discipline, and morality. Health is not simply defined in terms of medical knowledge. Historically, health has been defined for women in terms of beauty and reproduc-

tive ability. Trace the history of standards for the ideal body, beginning with redefinitions of the body in the 17th century, moving through the Industrial Revolution, and into the 1990s. Unpack the often hidden assumptions that define health according to the body's ability to meet changing social requirements for appearance and productivity. You'll discover that your "health" isn't being discussed only in terms of biology or medicine, but in terms of the marketplace and morality. Untangle some of the mixed messages that surround women's bodies and learn how prescriptions for appearance may be unwittingly written into your doctor's prescription for health.

Fall Spec Term, Sec 1, T, 6-8, Oct. 5-26 (4 meetings), CivMinE 213. *No late fee through Sept. 28.*

(*Mary Petrie is a writer and doctoral candidate in English with a minor in feminist studies at the University of Minnesota. Her academic work focuses on the production of knowledge and the social construction of gender*)

CSch 0285 OLDER WOMEN'S WISDOM, OLDER WOMEN'S LIVES. No credit, \$64 (age 62, \$57.60).

Two small books—both jewels, both under 150 pages—will serve as the basis for discussion. In *The Measure of My Days*, Florida Scott-Maxwell writes thoughtfully and provocatively about her own life and about all of our lives. In *Writing a Woman's Life*, Carolyn Heilbrun draws on the experiences of celebrated women writers (her own included) to address the difficulties and truths of the female experience. Join us for conversations about their lives and their thinking, your lives and your thinking. (Offered in cooperation with the Woman's Club of Minneapolis. Limited to 25)

Spring Spec Term, ★Sec 1, M, 10 a.m.-12, Apr. 4-25 (4 meetings), Woman's Club of Mpls, 410 Oak Grove. *No late fee through Mar. 28.*

(*Carol Daly is state director for Minnesota Elderhostel and a graduate student in adult education. Her research interest is older women*)

CSch 0290 UNDERSTANDING LETHAL CONFLICTS: WHEN NATIONALITIES AND NEIGHBORS TURN MURDEROUS. No credit, \$72 (age 62, \$64.80).

What has happened in places like the former Yugoslavia, Northern Ireland, and the Middle East? Why do people who live side by side in comparative peace for decades turn to violence to resolve their differences? Why do such conflicts then continue year after year with people who were former neighbors now attempting to murder one another? How can the changes in levels of mutual hostility and aggression be explained? Learn the role language, religion, and ethnicity play in conflicts. Read and discuss descriptions of lethal and nonlethal conflicts in an attempt to understand these long-lasting cycles of violence.

Spring Spec Term, Sec 1, M, 6-8, Apr. 11-May 2 (4 meetings), FordH 285. *No late fee through Apr. 4.*

(David Cooperman is a professor of sociology at the University of Minnesota. His research interests involve the sociological uses of power, force, and violence, and his current projects include incorporate conflicts and the collective acts of altruism during World War II)

CSch 0291 PHOTOGRAPHY IN THE MEDIA: IMAGES OF BEAUTY AND DOCUMENTATION. No credit, \$63 (age 62, \$56.70).

Photographs are all around us—in magazines, advertisements, newspapers, and picture magazines (such as *People* and *Life*). You often see life through pictures and yet pay little attention to the long history of photography and how it is uniquely interwoven with art and science. Explore the history of photography as it functions in the media—from fashion and advertising to documentation of natural disaster and war. How is photography used by the media to present pictures of beauty and document what is newsworthy? Where did the “right” kinds of images for fashion and newspapers come from? Follow this dramatic development through slides and lectures.

Spring Spec Term, Sec 1, M, 6-8, Apr. 11-May 2 (4 meetings), JonesH 10. *No late fee through Apr. 4.*

(Janine Ferguson is a doctoral candidate in the Department of Cultural Studies and Comparative Literature at the University of Minnesota. She has taught courses in the history of the avant-garde and given lectures on the history of photography. Her research interests include the relationship between photography and other art forms)

CSch 0292 EXPLORING ANCIENT ISRAEL: A WALK THROUGH TIME. No credit, \$80 (age 62, \$72).

The narrow, stony little labyrinth that is the land of Israel has given us the legacy of Judaism and Christianity. In lectures accompanied by slides, take an extended hike through ancient historical and Biblical Israel, seeing how the places so central to the Hebrew Scriptures and New Testament match the physical and geographical reality. Look at nature in the Bible, explore the desert in the south and mountains in the north, poke through the field of Biblical archaeology, and climb to ancient Jerusalem. (Limited to 50)

Winter Spec Term, ★Sec 1, Th, 6-8, Jan. 20-Feb.

17 (5 meetings), Lutheran Church of the Good Shepherd, Red Lecture Room, 4801 France Ave. South, Edina (park in and enter from lot south of the Church). *No late fee through Jan. 13.*

(Allan Rabinowitz lectures widely on Israel. He lived there for 10 years, working as a journalist and licensed tour and educational guide for the Jerusalem municipality and Hebrew University. He has written three travel books and his articles have appeared in the Jerusalem Post and other periodicals)

CSch 0293 WHO ARE THE PEOPLE OF MINNESOTA? No credit, \$90 (age 62, \$81).

Minnesotans, despite claims of homogeneity, are a very diverse people. From the original inhabitants to the latest arrivals, study the groups who chose Minnesota as home. From French-Canadians, Germans, and Scandinavians to Finns, Italians, and Slavic groups to the recent newcomers—Hispanics and Southeast Asians—learn the nature of their migrations, adaptations, and contributions to Minnesota. What kind of society is created from these different backgrounds and heritages? The class will have access to the resources at the Immigration History Research Center for individual or group projects. (Limited to 20)

Fall Spec Term, ★Sec 1, M, 6:30-8:30, Oct. 4-Nov.

1 (5 meetings), Immigration History Research Center, 826 Berry St., StP. *No late fee through Sept. 27.*

(Rudolph Vecoli is a professor of history at the University of Minnesota and director of the Immigration History Research Center. He specializes in American immigration history, especially Italian immigration, a topic on which he has written extensively)

CSch 0294 GONE BUT NOT FORGOTTEN: FUNERAL CUSTOMS IN THE U.S. No credit, \$72 (age 62, \$64.80).

Why did Victorians refer to death as "the dark mother"? What do funeral customs say about Western attitudes toward death? Trace changing attitudes toward mortality and the commercialization of funeral practices. Examine oddities like the Victorian fear of being buried alive, and study artifacts and photographic images of funerals. Discover the landscape, monuments, and architecture of famous American cemeteries through two slide lectures. Course concludes with a two-hour guided walking tour (Oct. 9) of the monuments and Byzantine Chapel of Lakewood Cemetery in Minneapolis, founded in 1872. (Limited to 30)

Fall Spec Term, ★Sec 1, M, 6:30-8:30, Sept. 27,

Oct 4 (2 meetings plus field trip), FordH 40. *No late fee through Sept. 20.*

(Timothy Blade is associate professor in the Department of Design, Housing, and Apparel at the University of Minnesota. He is an international expert and frequent commentator on the popular culture aspects of images, artifacts, and etiquette of funeral customs through the ages)

CSch 0298 READING THE URBAN LANDSCAPE: UNDERSTANDING AND INTERPRETING THE FORM AND STRUCTURE OF CITIES. No credit, \$81 (age 62, \$72.90).

The urban landscape is a combination of buildings and open spaces which act as a setting for human activity. The physical features of cities are a reflection of the histories, technologies, and cultural values of their citizens. Learn the processes through which the form and structure of a city develop and the way in which these processes give a particular look or character to a neighborhood, city, or group of cities. Explore the landscapes of various cities in the U.S. and around the world.

Fall Spec Term, Sec 1, M, 6-8, Oct. 4-Nov. 1 (5 meetings), FordH 120. *No late fee through Sept. 27.*

(Jack Byers is a Ph.D. candidate in geography and an instructor in urban studies at the University of Minnesota. As an architect he has participated in a wide range of building projects. For the last 10 years he has unraveled the meanings embedded in the urban landscape through writings, paintings, and photography)

Writing

CSch 0300 GRAMMAR FOR CREATIVE WRITERS. No credit, \$97 (age 62, \$87.30).

What makes Ernest Hemingway's stories different from Virginia Woolf's? There is subject matter, of course, but there is also the shape of the sentence, the way words wind their way across the page. There is grammar, syntax, and style. Students will read short stories by a broad range of literary stylists, use elements of grammar to understand these authors' works, and then apply their new understanding of style to enrich their own creative work. This is a course for language lovers, a course for creative writers who want to learn or relearn grammar in context. Readings will include a grammar handbook and an anthology of short stories. (Limited to 20)

Spring Spec Term, ★Sec 1, M, 6-8, Apr. 4-May 16 (7 meetings), FordH 60. *No late fee through Mar. 28.*

(Gretchen Legler has an M.A. in creative and professional writing from the University of Minnesota, where she is working on her Ph.D. in the Department of English. She has taught courses in composition, literature, women's studies, and creative writing and has published short stories and creative essays)

CSch 0301 CREATIVE WRITING I. No credit, \$97 (age 62, \$87.30).

Designed to focus on challenges and techniques involved in producing fictional (short stories and novels) and nonfictional (memoir) narratives. Challenges include writer's block, the difficulty of starting from scratch (followed by the difficulty of finishing what you've started), and deciding what to include in the story and what to leave out. Includes a look into the process of creating fiction: characterization, plot, dialogue, style, and authenticity of voice. Writing exercises will be offered as students explore new approaches to structure and style. Participants are welcome to bring in work for reading and discussion and to talk about problems that arise while writing. (Limited to 18)

Fall Spec Term, ★Sec 1, T, 6-8, Sept. 28-Nov. 9 (7 meetings), Phys 236A. *No late fee through Sept. 21.*

Fall Spec Term, ★Sec 2, W, 10 a.m.-12, Sept. 29-Nov. 10 (7 meetings), MacP. *No late fee through Sept. 22.*

(Todd Finley received his M.A. in creative writing from the University of Minnesota. He currently is enrolled in the English education Ph.D. program while writing a book about American Indians and another about aging. His work includes co-authoring Designing the Future)

CSch 0303 WHOLE-BRAIN WRITING. No credit, \$97 (age 62, \$87.30).

Offers fun "whole-brained" exercises designed to free students in their process of finding a personal narrative voice. Students will test and map out their brain dominance and talents, work on developing powerful writing, focus on a variety of writing problems, and study various strong "voices" from contemporary writers, learning their secrets of approach and execution. Right and left brain techniques include free-writing, captioning, group-writing, music-writing, spring-boarding (writing based on other writing), and persona-writing. (Limited to 20)

Fall Spec Term, ★Sec 1, M, 6-8, Oct. 4-Nov. 15 (7 meetings), Phys 236A. *No late fee through Sept. 27.*

(See *Todd Finley's biography in CSch 0301*)

CSch 0304 JOURNAL WRITING. No credit, \$88 plus \$3 special fee. Total \$91 (age 62, \$79.20 plus \$3 special fee. Total \$82.20).

Journal writing is an expressive form that is free from conventions and rules. You cannot do it wrong. Students write about their lives and what they are thinking and, when they choose, share their work with others in the class. For those who love the journal form and have had no experience writing journals, or for those who have taken previous journaling classes. Students read journals and diaries of writers both past and present. Suggested text: Tristine Ranier's *The New Diary*. (Limited to 20)

Fall Spec Term, ★Sec 1, T, 10 a.m.-12, Oct. 5-Nov. 9 (6 meetings), MacP. *No late fee through Sept. 28.*

(*Edith Mucke, assistant professor emeritus, is a former director of Continuing Education for Women at the University of Minnesota. A worldwide traveler, she has written 17 travel journals and a book, yet to be published. She has taught journal writing for 20 years, encouraging and inspiring students to write*)

CSch 0305 WRITING THROUGH GRIEF AND LOSS: WALK THE CIRCLE OF THE MOUNTAIN. No credit, \$92 (age 62, \$82.80).

After any significant loss—death, divorce, disappointment—an individual experiences grief. Lasting from months to years, grief is our process for healing. Writing is a tool for healing and for life. Through regular writing in a journal, participants explore this tool as a means to honor our personal journeys. The page is used as a listener when our stories must be told and retold. Learn from the act of writing what our inner selves can teach us. In-class exercises focus on techniques of writing as discovery and as craft, and on aspects of the healing process. Although this is not a therapy group, a confidential and supportive atmosphere is maintained. Participants should come to each class with an easy-writing pen and a simple notebook. (Limited to 15)

Spring Spec Term, ★Sec 1, W, 6-8, Apr. 6-May 11 (6 meetings), Washburn Library, 5244 Lyndale Ave. South, Mpls. *No late fee through Mar. 30.*

(*Elizabeth Johnson is an advanced graduate student in the Creative and Professional Writing Program at the University of Minnesota. She is also a nurse*)

CSch 0306 WITNESSING THE LIGHT: READING AND WRITING ABOUT HOPE, FAITH, COURAGE, AND SURVIVAL. No credit, \$83 (age 62, \$74.70).

Everyone who has ever lived has been part of a story, and witnessed the terrible and brilliant moments of hope, faith, courage, and survival. Explore these "moments of light" by writing your memories and family stories and reading journals, letters, essays, and poems by writers of varied cultures. Become aware of your part in the collective memory of humankind. The readings and discussion will generate ideas for in-class writing. There will be time to share your "work-in-process" in a supportive atmosphere. Requested reading: *An Interrupted Life* by Etty Hillesum. (Limited to 18)

Winter Spec Term, ★Sec 1, T, 1-3, Feb. 1-Mar. 8 (6 meetings), MacP. *No late fee through Jan. 25.*

(*Elizabeth Kilde Fischer has an M.A. in English and creative writing from the University of Minnesota. She has taught poetry and writing classes at the University and in public schools, and has published some of her work*)

CSch 0307 SELF AND PLACE: A CREATIVE WRITING COURSE. No credit, \$88 (age 62, \$79.20).

Learn to articulate the connections between self and place, history and geography, and inner and outer landscapes to create stories grounded in place. Your place may be outdoors, in the mountains, by a quiet stream, the desert, a backyard, an urban park, a street, a house, a kitchen, or an office building. The philosophical foundation of this course is that self is grounded in geography and memory is invested in place. Students will read and write in and out of class, sharing your work in a semi-formal class setting. Open to writers in beginning as well as advanced stages of their careers working in any genre. Course materials may include an anthology and/or a packet of photocopied readings. (Limited to 18)

Winter Spec Term, ★Sec 1, Th, 6-8, Jan. 27-Mar. 3 (6 meetings), FordH 120. *No late fee through Jan. 20.*

(*Gretchen Legler has an M.A. in creative and professional writing from the University of Minnesota, where she is working on her Ph.D. in the Department of English. She has taught courses in composition, literature, women's studies, and creative writing, and has published short stories and creative essays*)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

Noncredit Courses

CSch 0308 READING AND WRITING THE SHORT STORY. No credit, \$88 (age 62, \$79.20).

Explore the development of the short story form and its current variations. A close reading of fine stories and a spirited reading of works by Pulitzer Prize winner Jane Smiley precede a supportive workshop for unpublished fiction writers to write and respond to original stories. Individual manuscript review available. Texts: *The Story and Its Writer* (3rd edition) edited by Ann Charter and *The Age of Grief and Other Stories* by Jane Smiley. (Limited to 20)

Fall Spec Term, ★Sec 1, W, 6-8, Oct. 6-Nov. 10 (6 meetings), FordH 70. *No late fee through Sept. 29.*

(Elizabeth Mische John teaches writing and literature at the University of Minnesota, where she is a Ph.D. candidate in English literature. Her fiction, poetry, and reviews have appeared in numerous publications. She received the 1992 Gesell Award from the University's Program in Creative and Professional Writing and a 1993 Loft-McKnight Fellowship for Fiction)

CSch 0309 USING HISTORY IN CREATIVE WRITING. No credit, \$88 (age 62, \$79.20).

History is an aspect of creative writing rarely discussed, but is central to the writer seeking to expand their range beyond the personal or familiar. History is a broad term—it might mean yesterday or a thousand years ago; it might include regional geology, the politics of industrialization, or social habits of people at war. Whether writing a contemplative poem based on a medieval painting or a short story on Vietnam, learn to integrate history into your writing to strengthen the emotion or impulse that drives the piece. Includes readings, research, and sharing in a supportive group atmosphere. Writers of all genres at all levels of experience are welcome. (Limited to 18)

Fall Spec Term, ★Sec 1, Th, 6-8, Oct. 7-Nov. 11 (6 meetings), MurH 311. *No late fee through Sept. 30.*

(Janice Paynick, a doctoral student in English at the University of Minnesota, holds an M.A. in English with an emphasis in creative writing. She has taught composition, fiction, and literature courses at the University, and has published fiction and reviews and is currently on the editorial collective of Hurricane Alice, a feminist quarterly)

CSch 0310 SUDDEN FICTION: WRITING THE SHORT-SHORT STORY. No credit, \$88 (age 62, \$79.20).

Explore the art of the short-short story—those evocative, two- or three-page prose pieces (give or take a page) which lately became popular under the banners of “sudden fiction” or “flash fiction.” Short-shorts aren’t really new (think back to the highly condensed stories of writers like Hemingway, Colette, and Isaac Babel). What is new is the attention they are getting from readers and editors and, perhaps, their relevance in this age of sound bites and short attention spans. Learn what makes a good short-short tick by reading works of various authors, writing some short-shorts, and sharing your work in a relaxed, supportive, and fun environment. Beginning as well as experienced writers are welcome. (Limited to 20)

Winter Spec Term, ★Sec 1, M, 6-8, Jan. 24-Feb. 28 (6 meetings), Walker Library, 2880 Hennepin Ave. South, Mpls. *No late fee through Jan. 18.*

(Will Hermes is an advanced graduate student in creative and professional writing at the University of Minnesota, where he also teaches fiction writing. He is a frequent contributor to City Pages and Minnesota Monthly)

CSch 0311 THE DIARY IN YOUR DESK: MAKING PERSONAL PROSE PUBLISHABLE. No credit, \$58 (age 62, \$52.20).

Those old diaries cluttering your closet may hold more than memories. There’s material there that can be turned into essays, articles, or stories. Experiment with using your journal or diary in connection with more structured writing, like essays, articles, or short stories. You’ll examine how writers like Sylvia Plath, Virginia Woolf, and Albert Camus used journal writing. Mostly, you’ll focus on turning stories drawn from diaries and journals into more structured pieces of writing. (Limited to 20)

Winter Spec Term, ★Sec 1, T, 10:15 a.m.-12:15, Jan. 11-Feb. 1 (4 meetings), Washburn Library, 5244 Lyndale Ave South, Mpls. *No late fee through Jan. 4.*

(Mary Petrie is a writer and doctoral candidate in English at the University of Minnesota. She was awarded a 1991 Minnesota State Arts Board Grant for creative nonfiction and is the author of a workbook on journal writing)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSch 0312 THE STORY IN HISTORY: WRITING YOUR WAY INTO THE AMERICAN EXPERIENCE.

No credit, \$72 (age 62, \$64.80). Forget dry-as-dust approaches to American history and instead use creative writing techniques to enter the personal and public past. Learn and practice many writing techniques to find the charm and significance of writing about the past. Write poems to grandparents or compose ballads about heroes and heroines whose moments of crisis defined a generation. Place new perspectives on the Civil War, lynching, and uprisings through photos of war and violence, and explore Native American calendars called "winter counts." Chart local histories in kitchenettes, gabled roofs, tract houses, and shopping malls. Define the era of World War II using the automobile as a character in drama. (Limited to 20)

Spring Spec Term, ★Sec 1, Th, 6:30-8:30, Apr. 7-May 5 (5 meetings), Linden Hills Library, 2900 West 43rd St., Mpls. *No late fee through Mar. 31.*

(Margo Fortunato Galt, poet, author of The Story in History, and journalist, teaches in the COMPAS Writers and Artists in the Schools program at Hamline University. She has received grants and awards from the Minnesota State Arts Board, the Jerome Foundation, and The Loft. Her work has appeared in numerous local and national publications. She has a Ph.D. from the University of Minnesota in American studies)

CSch 0313 SPRING JOURNAL PILGRIMAGE: A WORKSHOP WITH PHEBE HANSON.

No credit, \$72 (age 62 and Arboretum members, \$64.80). *Does not include lunch.*

"April is the month," Chaucer wrote, "when sweet showers pierce the drought of March and folks long to go on pilgrimages." In this course, you'll take a spring pilgrimage, journal in hand, try out a host of new ways to write, and expand your ideas of what a journal might be through writing exercises and short inspirational excerpts from the journals of the famous and the obscure. The Arboretum tea room is open for lunch or you can bring a lunch and eat on the Arboretum grounds. (Offered in cooperation with the Minnesota Landscape Arboretum. Admission fee to Arboretum waived with course registration receipt. Limited to 22)

Spring Spec Term, ★Sec 1, Sa, 9:30 a.m.-4:30, Apr. 23 (1 meeting), Minnesota Landscape Arboretum, Classroom 1, 3675 Arboretum Drive, Chanhassen. *No late fee through Apr. 15.*

(Phebe Hanson began keeping a diary when she was 11 and has been writing journals ever since. She's also a poet [Sacred Hearts, Milkweed Editions] and an associate professor in the Liberal Arts Division of the Minneapolis College of Art and Design, where she teaches writing and literature courses)

CSch 0314 MEMORIES, VOICES, DREAMS, POEMS (AND TREES): A POETRY WORKSHOP WITH MICHAEL DENNIS BROWNE.

No credit, \$72 (age 62 and Arboretum members, \$64.80). *Does not include lunch.* A poetry workshop for people with a little (not a huge) amount of experience in writing poetry who want to uncover, re-discover, experiment with their capacity for playing with words, rhythms, phrases, images. Through the day we'll try many ways of beginning and developing poems and get to know a number of strongly written, exciting contemporary poems. We'll discuss the role of memory, the use of dream material, and ways to open up to the range of voices we all carry around inside. And of course we'll talk to the trees. Lunch not included; cafeteria available. (Offered in cooperation with the Minnesota Landscape Arboretum. Admission fee to Arboretum waived with course registration receipt. Limited to 22)

Fall Spec Term, ★Sec 1, Sa, 9 a.m.-4, Oct. 16 (1 meeting), Minnesota Landscape Arboretum, Classroom 1, 3675 Arboretum Dr., Chanhassen. *No late fee through Oct. 8.*

(Michael Dennis Browne is a professor of English, recipient of a 1989 Distinguished Teacher Award from the College of Liberal Arts, and director of the Program in Creative and Professional Writing at the University of Minnesota. He is the author of four published collections of poetry [his most recent is You Won't Remember This] and many texts for music. His awards include fellowships from both the National Endowment for the Arts and the Bush Foundation)

CSch 0315 LIVING TWICE: WRITING AUTOBIOGRAPHY.

No credit, \$88 (age 62, \$79.20). "To write one's life is to live it twice," states Patricia Hampl. Come read and discuss her most recent memoir, *Virgin Time*, and fellow Minnesotan Evelyn Fairbanks's autobiography, *The Days of Rondo*, set in a black St. Paul neighborhood in the 1930s and 1940s, as well as brief selections by Alfred Kazin and Richard Rodriguez. Autobiographical writing is a kind of "archaeology" where we go digging in the past to gain insight on the present. Therefore weekly writing suggestions and sharing of work in a supportive atmosphere are an integral part of this class. (Limited to 20)

Spring Spec Term, ★Sec 1, T, 10 a.m.-12, Apr. 5-May 10 (6 meetings), MacP. *No late fee through Mar. 29.*

(Jeff Juffries is a Ph.D. candidate in English literature at the University of Minnesota. She has an M.A. in creative writing from the University)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

Noncredit Courses

CSch 0316 CLARITY, PASSION, AND POWER: THE ART OF THE PERSONAL ESSAY. No credit, \$72 (age 62, \$64.80).

Personal essays must enthrall the reader by bestowing secrets and revelations while maintaining a trust in the integrity of the narrator. A successful essay writer must be able to transform personal memories and journal entries into narratives that outside readers can understand and enjoy. Learn techniques for creating a self-sufficient world in the written text, guidelines for reshaping remembered events into story structures, and how to develop a uniquely personal voice. The instructor will read and comment on one short essay by each student. (Limited to 20)

Fall Spec Term, ★Sec 1, M, 10:15 a.m.-12:15, Oct. 4-Nov. 1 (5 meetings), Walker Library, 2880 Hennepin Ave. South, Mpls. *No late fee through Sept. 27.*

(Lawrence Sutin, adjunct professor of writing at Hamline University, has taught at The Loft and in the COMPAS Mailbox Program. He is the author of a biography, Divine Invasions: A Life of Phillip K. Dick, and his essays and reviews have appeared in numerous publications, including the Hungry Mind Review, Minnesota Monthly, and the Saturday Evening Post)

CSch 0320 NONFICTION WRITING FOR BEGINNERS. No credit, \$86 (age 62, \$77.40).

Designed for individuals with little or no experience in nonfiction writing for publication. Includes instruction in basic writing and marketing skills provided within a supportive atmosphere. Professional writers talk with students at several sessions. (Limited to 18)

Fall Spec Term, ★Sec 1, Th, 3-5, Sept. 30-Nov. 4 (6 meetings), Washburn Library, 5244 Lyndale Ave. South, Mpls. *No late fee through Sept. 23.*

(Judith Vick has a master's degree in journalism from the University of Minnesota. She is a published author, an editor of newspaper and magazine articles and several books, and a market consultant)

CSch 0321 NONFICTION WRITING FOR PUBLICATION. No credit, \$95 (age 62, \$85.50).

Students with some writing experience refine their skills and learn procedures for selling their work in magazine, newspaper, book, and corporate markets. Self-publishing is introduced. Editors and professional writers from a variety of publications talk with students at several sessions. Participants receive critiques of their work in a supportive atmosphere. (Limited to 15)

Spring Spec Term, ★Sec 1, Th, 3-5, Apr. 7-May 12 (6 meetings), Washburn Library, 5244 Lyndale Ave. South, Mpls. *No late fee through Mar. 31.*

(See Judith Vick's biography in CSch 0320)

CSch 0322 CREATIVE ARTICLE AND ESSAY WRITING. No credit, \$100 (age 62, \$90).

Annie Dillard writes this of nonfiction: "The essay can do everything a poem can do, and everything a short story can do—everything but fake it. The essayist does what we do with our lives; the essayist thinks about actual things." Some of the possible topics for nonfiction writing include historical, cultural, or natural events as well as personal experiences. Practice generating article ideas and refining writing skills in a supportive workshop atmosphere. Includes practical aspects of breaking into print such as the query letter. (Limited to 20)

Winter Spec Term, ★Sec 1, W, 6-8, Jan. 12-Feb. 23 (7 meetings), FordH 50. *No late fee through Jan. 5.*

(Mary Ellen Ashcroft has a Ph.D. in composition theory from the University of Minnesota. Her Ph.D. emphasis is women's writing choices)

CSch 0350 FREE-LANCE MAGAZINE WRITING. No credit, \$110 (age 62, \$99).

Designed to help writers sell their nonfiction work to local and national magazines. In a supportive workshop atmosphere, students learn how to analyze markets, write query letters, conduct interviews, and research, organize, and write articles. (Limited to 15)

Fall Spec Term, ★Sec 1, W, 1-3, Sept. 29-Nov. 10 (7 meetings), Walker Library, 2880 Hennepin Ave. South, Mpls. *No late fee through Sept. 22.*

(Susan Perry has written articles for more than 100 magazines and newspapers, including Woman's Day, Working Woman, and the Minneapolis Star Tribune. She is a former writer/editor for Time-Life Books, co-author of Nightmare: Women and the Dalkon Shield, The Secrets Your Body Clocks Reveal, and Natural Menopause, and has ghosted or contributed to a variety of other books)

CSch 0351 WRITING A BOOK PROPOSAL. No credit, \$73 (age 62, \$65.70).

Designed to help writers put together a finished nonfiction book proposal to send to an agent or publisher. Emphasis is on nonfiction. Students learn how to research, write, and market a proposal, and should come to the first class with an idea for a book. (Limited to 20)

Spring Spec Term, ★Sec 1, W, 1-3, Apr. 6-May 4 (5 meetings), Walker Library, 2880 Hennepin Ave. South, Mpls. *No late fee through Mar. 30.*

(See Susan Perry's biography in CSch 0350)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSch 0352 MAGAZINE WRITING. No credit, \$115 (age 62, \$103.50).

The rapidly growing world of magazines provides many opportunities for the free-lance writer. This practical class is designed to help both beginning and experienced writers tailor their work for magazines. Discuss how to get article ideas, how to interview and search for information, how to develop a magazine writing style, and how to market your work. Class format includes workshop-style critiques of students' articles and usually a visit by guest editors or writers. (Limited to 30)

Spring Spec Term, ★Sec 1, Th, 7-9, Apr. 7-May 26 (8 meetings), ClaOff B30, StP campus. *No late fee through Mar. 31.*

(Sara Saetre is an editor at Lerner Publications and a past editor of Health Sciences magazine whose free-lance work has appeared in the Utne Reader, Working Woman, Mpls./St. Paul magazine, and other publications. James Thornton is a full-time free-lance writer whose articles have appeared in Sports Illustrated, Glamour, Men's Health, Minnesota Monthly, and other magazines)

CSch 0353 WRITING MAGAZINE PROFILES. No credit, \$87 (age 62, \$78.30).

The profile is the single most common magazine feature story. In this class, nonfiction and fiction writers alike will learn interviewing, reporting, structuring, and writing techniques designed to better capture in words the essence of real-life characters. For beginning and experienced writers seeking to branch out beyond primarily personal subject matter, this workshop should prove eye-opening and fun. (Limited to 20)

Fall Spec Term, ★Sec 1, W, 7:30-9:30, Oct. 13-Nov. 17 (6 meetings), FordH 130. *No late fee through Oct. 6.*

(James Thornton is a full-time free-lance writer whose articles have appeared in Sports Illustrated, Glamour, Men's Health, Minnesota Monthly, and other magazines)

CSch 0354 WIN A FREE TRIP: TRAVEL WRITING THAT SELLS. No credit, \$72 (age 62, \$64.80).

Capture that perfect destination and the editor's eye. Lectures, handouts, exercises, and written examples will guide you in choosing and approaching a subject with language that's fresh and evocative, informative and concise. Craft the all-important query letter. Locate and target select as well as broad markets. Find a hook; compile a research bank; double results through second-time sales; create and market your unique niche. Weekly assignments and group discussion will help you prepare exciting writing that could become a career. (Limited to 20)

Fall Spec Term, ★Sec 1, W, 6:30-8:30, Oct. 6-Nov.

3 (5 meetings), Walker Library, 2880 Hennepin Ave. South, Mpls. *No late fee through Sept. 29.*

(Carla Waldemar is a writer, editor, and reviewer. She has been a successful travel writer for 12 years with work published in Twin Cities periodicals, the Chicago Tribune and New York Times, national magazines including Travel & Leisure and Midwest Living, and guide books such as Fodor, Zagat, and the London Economist)

CSch 0355 MAGAZINE WRITING: IN THE FIRST PERSON. No credit, \$87 (age 62, \$78.30).

Personal stories can sometimes be the starting point for top-notch magazine journalism. Among other topics, this class will discuss when it makes sense to weave a writer's own experience into an article, how to flesh out the "I" character in a way that seems neither breezy nor self-important, and how outside research and reporting can make personal stories more interesting to a wider audience. If you have a story you're dying to tell, this supportive workshop should help you tell it better. (Limited to 20)

Winter Spec Term, ★Sec 1, W, 7:30-9:30, Jan. 12-Feb. 16 (6 meetings), NichH 122. *No late fee through Jan. 5.*

(James Thornton is a full-time free-lance writer whose articles have appeared in Sports Illustrated, Glamour, Men's Health, Minnesota Monthly, and other magazines)

CSch 0356 INTRODUCTION TO COPY-EDITING. No credit, \$115 (age 62, \$103.50).

A practical, intensive introduction to basic editorial skills. Extensive weekly homework assignments are designed to help class members master editing marks, word usage, consistency, fine points of grammar, and other copyediting problems. Recommended for writers and for people whose jobs require editing skills, and for others who enjoy language and words. Text: *The Chicago Manual of Style* and possibly other supplemental readings. (Limited to 25)

Fall Spec Term, ★Sec 1, Th, 7-9, Sept. 30-Nov. 18 (8 meetings), FordH 50, LaVigne. *No late fee through Sept. 23.*

Winter Spec Term, ★Sec 2, W, 1-3, Feb. 2-Mar. 23 (8 meetings), MacP, Perry. *No late fee through Jan. 26.*

Spring Spec Term, ★Sec 3, T, 6-8, Apr. 5-May 24 (8 meetings), FordH 50, Medeiros. *No late fee through Mar. 29.*

(Pamela LaVigne writes, copyedits, and oversees production for Update, a tabloid for University of Minnesota faculty, staff, and alumni. Susan Perry is a former writer/editor for Time-Life Books who now works full-time as a free-lance writer and editor. Richard Carlos Medeiros, a Ph.D. candidate in English at the University of Minnesota, has worked as a writing consultant and editor in business, academic, and other professional contexts)

Noncredit Courses

CSch 0362 LAYOUT AND PAGE DESIGN: TIPS AND TECHNIQUES FOR DESKTOP PUBLISHING. No credit, \$43 plus \$25 special fee. Total \$68 (age 62, \$38.70 plus \$25 special fee. Total \$63.70).

Explore the creative potential for page design and publications using Aldus Pagemaker on the Macintosh. Learn problem-solving skills, elements and principles of design, and depth perception cues of visual organization. Class includes lecture, discussion, demonstrations, and hands-on activities using Macintosh computers. Designed for those familiar with Pagemaker basics. (Limited to 20)

Fall Spec Term, ★Sec 1, M, 6-8, Oct. 4-18 (3 meetings), McNH 305, StP Campus. *No late fee through Sept. 27.*

(Janice Anderson, teaching associate in the Department of Design, Housing, and Apparel at the University of Minnesota, has over 15 years of experience as a graphic designer. She teaches a wide range of courses including graphic design and typography)

CSch 0363 THE FAULT WITH DEFAULT: TYPOGRAPHY FOR DESKTOP PUBLISHING. No credit, \$43 plus \$25 special fee. Total \$68 (age 62, \$38.70 plus \$25 special fee. Total \$63.70).

Exploration of aesthetic decision making for desktop publishing. Focus on page design and typographic selections based on criteria for good readability and legibility. Learn tips and techniques for optimizing program typographic capabilities. Develop an understanding of the aesthetics of type design and typography. Course includes slide lectures, discussions, demonstrations, and hands-on experience using Macintosh computers. Designed for those familiar with desktop publishing software like Aldus Pagemaker or Quark Xpress. (Limited to 20)

Fall Spec Term, ★Sec 1, M, 6-8, Oct. 25-Nov. 8 (3 meetings), McNH 305, StP Campus. *No late fee through Oct. 18.*

(See Janice Anderson's biography in CSch 0362)

Literature

CSch 0400 LITERARY SISTERS: VIRGINIA WOOLF AND KATHERINE MANSFIELD. No credit, \$86 (age 62, \$77.40).

"The only writing I have ever been jealous of" is how Virginia Woolf describes the work of her colleague Katherine Mansfield. Explore the relationship between these two modern writers through their lec-

tures, journals, and fiction. Discover their perspectives on historical and social events of their day. Read Mansfield's stories "The Garden Party," "Prelude," and "The Dove's Nest," and two of Woolf's best-known novels, *Mrs. Dalloway* and *To the Lighthouse*, to examine their role in the development of 20th-century literature.

Winter Spec Term, Sec 1, Th, 6-8, Feb. 3-Mar. 10 (6 meetings), FordH 130. *No late fee through Jan. 27.*

(Janice Paynick, a doctoral student in English at the University of Minnesota, holds an M.A. in English with an emphasis in creative writing. She has taught composition, fiction, and literature courses at the University, has published fiction and reviews, and is currently on the editorial collective of Hurricane Alice, a feminist quarterly)

CSch 0403 WOMEN IN LITERATURE: THE PORTRAYAL OF WOMEN IN NOVELS. No credit, Sec 1 and Sec 3, \$86 (age 62, \$77.40); Sec 2, \$100 (age 62, \$90).

More novels have been written by men than by women, yet women are frequently the central characters. Describing the emotional, moral, and social predicaments facing women allowed novelists to explore the human condition and incidentally provide us with insight into the role of women through modern history. Prior to the 20th century, this role was very limited. With few exceptions, wife/mother was the only role society considered as both permissible and desirable. This year's fall class will read and discuss Anne Brontë's *Agnes Grey* and *The Tenant of Windfell Hall*; during the winter, John Galsworthy's *Forsyte Saga* and Thomas Mann's *Buddenbrooks*; and in the spring, Arnold Bennett's *Old Wives Tale* and Ivy Compton-Burnett's *The Present and the Past*. (Offered in cooperation with the Woman's Club of Minneapolis. Limited to 50)

Fall Spec Term, ★Sec 1, F, 10 a.m.-12, Oct. 8-Nov. 12 (6 meetings), Woman's Club of Mpls, 410 Oak Grove. *No late fee through Oct. 1.*

Winter Spec Term, ★Sec 2, F, 10 a.m.-12, Jan. 14-Feb. 25 (7 meetings), Woman's Club of Mpls, 410 Oak Grove. *No late fee through Jan. 7.*

Spring Spec Term, ★Sec 3, F, 10 a.m.-12, Apr. 15-May 20 (6 meetings), Woman's Club of Mpls, 410 Oak Grove. *No late fee through Apr. 8.*

(Johanna Kheim has taught French and humanities at the University of Minnesota. Her doctoral studies at the University were in comparative literature with a focus on the 19th- and 20th-century novel)

CSch 0440 RUSSIA AND THE RUSSIANS THROUGH LITERATURE II. No credit, Sec 1-4, \$141 (age 62, \$126.90); Sec 5 and 6, \$127 (age 62, \$114.30).

Social and historical changes in Russia and the Russian character as revealed in 20th-century Russian/Soviet literature. A continuation of last year's class, but not limited to students who took that course. In the fall and winter, read and analyze Sholokhov's *And Quiet Flows the Don* and Pasternak's *Doctor Zhivago*, which describe the events of the 1917 revolution and conditions just preceding it. In the spring, conclude with contemporary novelists and short story writers including Tatyana Tolstaya. (Limited to 40. Limit is absolute—no instructor permission)

Fall Spec Term, ★Sec 1, T, 1-3, Oct. 5-Dec. 7 (10 meetings), MacP. *No late fee through Sept. 28.*

Fall Spec Term, ★Sec 2, W, 10 a.m.-12, Oct. 6-Dec. 8 (10 meetings), MacP. *No late fee through Sept. 29.*

Winter Spec Term, ★Sec 3, T, 1-3, Jan. 4-Mar. 8 (10 meetings), MacP. *No late fee through Dec. 28.*

Winter Spec Term, ★Sec 4, W, 10 a.m.-12, Jan. 5-Mar. 9 (10 meetings), MacP. *No late fee through Dec. 29.*

Spring Spec Term, ★Sec 5, T, 1-3, Apr. 5-May 31 (9 meetings), MacP. *No late fee through Mar. 29.*

Spring Spec Term, ★Sec 6, W, 10 a.m.-12, Apr. 6-June 1 (9 meetings), MacP. *No late fee through Mar. 30.*

(See *Johanna Kheim's biography in CSch 0403*)

CSch 0441 NORTHWESTERN (LITERARY) EXPOSURE: CONTEMPORARY VISIONS OF THE WILD WEST. No credit, \$89 (age 62, \$80.10).

The West has long been settled, but the desire to "strike out for the territories" lives on. Explore myths of the West through fiction, essays, and poetry of various authors, including Norman Maclean (*A River Runs Through It*), Gretel Ehrlich (selections from *The Solace of Open Spaces*), and Barry Lopez (*Of Wolves and Men*), writers who celebrate (and often struggle with) the truths, histories, and legends of the Great Northwest. No prior literary study required, just bring a fascination with, interest in, or curiosity about the lore of the Great Northwest.

Spring Spec Term, Sec 1, T, 6-8, Apr. 5-May 10 (6 meetings), Washburn Library, 5244 Lyndale Ave. South, Mpls. *No late fee through Mar. 29.*

(*Sonia Apgar, a native Northwesterner with a background in regional literature, teaches composition at the University of Minnesota. Also a doctoral candidate in English, her special interests include autobiography, cultural studies, and pedagogy*)

CSch 0442 MEDICINE, SOCIETY, AND LITERATURE. No credit, \$86 (age 62, \$77.40).

When we're confused about the medical/nutritional status of bran, or wonder why we can't escape the medical news that bombards us everyday, it may be because we don't fully understand the influence of medical theory on our lives and ways of thinking. Through literature, explore the impact of different historical approaches to medicine on definitions of ourselves, our bodies, and our approach to social issues. For example, epidemics in ancient Greece produced philosophies of balance and moderation, and in the Middle Ages a definition of life as a vale of tears; in the 19th century tuberculosis patients became an artistic ideal; and in our era AIDS redefines society in harsh ways. Class members will determine which topics to trace through historical medical models in literature.

Fall Spec Term, Sec 1, W, 6-8, Oct. 6-Nov. 10 (6 meetings), MoosT 2-520. *No late fee through Sept. 29.*

(*Bill West is a doctoral candidate in English literature at the University of Minnesota. He also has worked for 20 years in health care management and has lectured for University of California graduate pharmacy and nursing students, for the American Hospital Association, and for other health care organizations*)

CSch 0443 FORGOTTEN HEIRLOOMS: SHORT STORIES OF FAMOUS VICTORIAN NOVELISTS. No credit, \$72 (age 62, \$64.80).

The novels of Victorian writers like Charles Dickens, George Eliot, Elizabeth Gaskell, and Thomas Hardy are known and loved. But most people have never read the equally dynamic, much more experimental writing of these authors in the short story form. Come read these authors and be introduced to others—some famous for their novels, some forgotten because they wrote primarily short stories. Reclaim these forgotten heirlooms of Victorian fiction.

Spring Spec Term, Sec 1, M, 10 a.m.-12, Apr. 4-May 2 (5 meetings), MacP. *No late fee through Mar. 28.*

(*Ruth Jeffries, a Ph.D. candidate in the Department of English at the University of Minnesota, specializes in the Victorian short story*)

Noncredit Courses

CSch 0444 COMPLETELY ORDINARY, COMPLETELY MYSTERIOUS: THE WORLDS OF URSULA K. LEGUIN. No credit, \$92 (age 62, \$82.80).

Ursula LeGuin is one of the preeminent novelists of our time. While widely known for her award-winning work in science fiction and fantasy (*The Dispossessed*, *The Left Hand of Darkness*, the Earthsea quartet), she's also published what the critical world arbitrarily calls "mainstream" work, including her recent novel, *Searoad: Chronicles of Klatsand*, and a collection of essays and reviews, *Dancing at the Edge of the World*. LeGuin's work addresses issues of gender, community, and personal and collective responsibility for our actions. She vividly evokes the dilemmas and decisions of the late 20th century regardless of when or where a particular story is set. We will read three of her works (*The Left Hand of Darkness*, *Searoad: Chronicles of Klatsand*, *Dancing at the Edge of the World*) and consider the messages she conveys about our times and lives.

Fall Spec Term, Sec 1, M, 6-8, Oct. 4-Nov. 8 (6 meetings), Washburn Library, 5244 Lyndale Ave. South, Mpls. *No late fee through Sept. 27.*

(Christine Mack Gordon is assistant to the director of the Program in Creative and Professional Writing at the University of Minnesota, where she received her M.A. in English and teaches occasionally in both day school and Extension Classes)

CSch 0446 WANDA GAG AND AFTER: CHILDREN'S PICTURE BOOKS. No credit, \$65 (age 62, \$58.50).

Minnesota native Wanda Gag wrote and illustrated *Millions of Cats* (1928), considered the classic American children's picture book. Now there are 5,000 children's books published each year in the U.S. Using original manuscripts and illustrations from the nationally known Kerlan Collection of children's books, gain hands-on knowledge about how an artist creates a picture book. Explore the works of Gag, Tomie DePaola (*Strega Nona*), Nancy Carlson (*Harriet's Recital*), and others. (Limited to 35)

Fall Spec Term, ★Sec 1, T, 6-8, Sept. 28-Oct. 19 (4 meetings), WaLib 109. *No late fee through Sept. 21.*

(Karen Hoyle is a professor and for 25 years the curator of the Children's Literature Research Collections, including the Kerlan Collection, at the University of Minnesota. She was a member and later chair of the Caldecott Award Committee, which selects the most distinguished picture book published the previous year)

Natural and Physical Sciences

CSch 0501 ECOLOGY AND CONSERVATION OF TROPICAL RAIN FORESTS. No credit, \$51 (age 62 and Minnesota Zoo members, \$45.90).

Tropical forests account for over half of the plant and animal species found in the world, yet cover only seven percent of the earth's surface. Discover the characteristics of tropical forests that have given rise to this extraordinary biodiversity and examples of plant and animal adaptations. Discover firsthand current conservation efforts. Meet guest speakers and scientists who work in tropical forests worldwide. This class will utilize the living zoo collection to illustrate such topics as biodiversity, sustainable agriculture, plant/animal adaptations, and conservation efforts. (Offered in cooperation with the Minnesota Zoo. Limited to 25)

Winter Spec Term, ★Sec 1, Sa, 9 a.m.-12:30, Mar. 5, 12 (2 meetings), Minnesota Zoo, 13000 Zoo Boulevard, Apple Valley (meet in lobby). *No late fee through Feb. 25.*

(Kathy Castle, a graduate student in wildlife conservation in the Department of Fisheries and Wildlife at the University of Minnesota, is curator of tropics at the Minnesota Zoo. Steve Hage, conservation education specialist at the Minnesota Zoo, is a Ph.D. candidate in conservation biology at the University)

CSch 0507 THE DYNAMIC ECOLOGY OF MIDWESTERN FORESTS. No credit, \$102 (age 62 and Bell Museum members, \$91.80).

Can fires like the one that ravaged Yellowstone in 1988 happen in Minnesota? Study the history and role of natural disturbances in Midwestern forests. Examine tree population dynamics (reproduction, mortality, and competition) and discuss the potential impact of acid rain and global warming on the forests. In the field, learn to detect past occurrences of deer browsing, forest fires, and windstorms, and interpret how these events will influence future forest development. Field trip dates and locations (one Saturday half-day and one Saturday full-day) will be arranged on the first day of class (**participants provide own transportation and may choose to carpool**). (Offered in cooperation with the Bell Museum of Natural History. Limited to 20)

Fall Spec Term, ★Sec 1, T, 6:30-8:30, Sept. 28-Oct. 26 (5 meetings plus 2 field trips), BellMus 3 (use Auditorium entrance facing Church Street). *No late fee through Sept. 21.*

(Dr. Lee Frelich is a research associate in forest resources at the University of Minnesota. He received his Ph.D. in forest ecology and his research interests are in the role of natural disturbances in forest development)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSch 0516 NATURE IN PEN AND INK: TECHNIQUES IN NATURAL HISTORY DRAWING. No credit, \$100 plus \$10 special fee. Total \$110 (age 62 and Bell Museum members, \$90 plus \$10 special fee. Total \$100).

Observe the natural world through the critical eyes of an artist, and transform your appreciation of nature into creative images. Examine a variety of techniques and mediums used by natural history artists and illustrators. Sharpen your drawing skills using the rich source of subject material at the Bell Museum and during one half-day Saturday field trip (**date and time to be arranged; participants provide own transportation and may choose to carpool**). This is a continuation of CSch 0543 Natural History Drawing, and students need this prerequisite or other previous drawing experience. Students supply basic drawing materials (the \$10 special fee is needed to cover specialized materials). (Offered in cooperation with the Bell Museum of Natural History. Limited to 20) Winter Spec Term, ★Sec 1, M, 7-9, Feb. 28-Apr. 4 (6 meetings plus field trip), BellMus 3 (use Auditorium entrance facing Church Street). *No late fee through Feb. 21.*

(Don Luce, a curator of natural history art, researches, designs, and produces exhibits for the Bell Museum at the University of Minnesota. He also does scientific illustrations and fine art. He has a research interest in the history of scientific illustration and has written a book and several articles on the life and art of Francis Lee Jaques)

CSch 0521 EAGLES: THEIR NATURAL HISTORY AND PLACE AS A CULTURAL ICON. No credit, \$64 (age 62 and Bell Museum members, \$57.60).

Explore the natural history and biology of eagles, with a special focus on the bald eagle and golden eagle in North America. Examine the cultural uses that eagles serve around the world. Includes observation of live eagles from the Gabbert Raptor Center and a full-day field trip to view eagles wintering along the Mississippi River (**Jan. 29; participants provide own transportation and may choose to carpool**). (Offered in cooperation with the Bell Museum of Natural History. Limited to 25)

Winter Spec Term, ★Sec 1, Th, 6:30-8:30, Jan. 20-Feb. 3 (3 meetings plus field trip), GRaptCtr, StP Campus. *No late fee through Jan. 13.*

(Mark Martell, staff member of the Gabbert Raptor Center since 1981, has an M.S. in wildlife conservation from the University of Minnesota. He is currently studying nesting and wintering eagles on the Mississippi River and is involved with a project to study Stellar's sea eagles in Russia)

CSch 0523 EARLY SPRING ORNITHOLOGY: ECOLOGY, BEHAVIOR, AND IDENTIFICATION OF MINNESOTA'S BIRDS. No credit, \$126 (age 62 and Bell Museum members, \$113.40).

For novices as well as those who have acquired some basic bird identification skills. Classroom sessions cover a variety of avian biology, including migration and flight, vocalizations, plumages, breeding biology, geographical distribution, habitat preferences, social behavior, and sight and sound identification. On three local half-day field trips (**Mar. 26, Apr. 16, 23**) and one full-day trip to the Weaver Marshes (**Apr. 2**), observe and identify resident and early spring migrant birds (especially waterfowl, hawks, and sparrows), and learn more about migration, song, ecology, and breeding behavior (**participants provide own transportation and may choose to carpool on field trips**). Binoculars and field guide are essential. (Offered in cooperation with the Bell Museum of Natural History. Limited to 20)

Spring Spec Term, ★Sec 1, W, 7-9, Mar. 23-Apr. 20 (5 meetings plus 4 field trips), Ecology 150C, StP Campus. *No late fee through Mar. 16.*

(Bruce A. Fall is assistant to the director in the General Biology Program at the University of Minnesota, where he teaches introductory evolutionary biology. He has also organized and led ornithology field trips for the Bell Museum)

CSch 0524 BIRDS OF A FEATHER: ENDANGERED SPECIES SURVIVAL. No credit, \$51 (age 62 and Minnesota Zoo members, \$45.90).

Birds are facing increasing threats from habitat loss, illegal trade, and environmental disasters; the Minnesota Zoo has made commitments to the preservation and conservation of both local and international bird species. Explore Zoo projects such as those involving mercury contamination in the common loon, artificial reproduction of the largest waterfowl in the world—the trumpeter swan, and reintroduction efforts of the Bali mynah from Indonesia. Examine issues of illegal wildlife capture and trade through use of parrots and biofacts. Includes observation of courtship behaviors of Zoo waterfowl. (Offered in cooperation with the Minnesota Zoo. Limited to 25)

Spring Spec Term, ★Sec 1, Sa, 9 a.m.-12:30, Apr. 16, 23 (2 meetings), Minnesota Zoo, 13000 Zoo Blvd., Apple Valley (meet in lobby). *No late fee through Apr. 8.*

(Jim Pichner, curator of birds at the Minnesota Zoo, has extensive hands-on experience raising endangered birds. He is responsible for the Zoo's trumpeter swan reproduction program and coordinates research relating to loon mortalities and mercury poisoning. Steve Hage is the conservation education specialist at the Minnesota Zoo and a Ph.D. candidate at the University of Minnesota in conservation biology)

Noncredit Courses

CSch 0527 BIRDS OF PREY: THEIR BIOLOGY AND ECOLOGY. No credit, \$76 (age 62 and Bell Museum members, \$68.40).

Birds of prey have a long history of association with humans: through falconry, as competitors for the same food, and currently as indicators of environmental problems. Concentrating on but not limited to North America, this course provides an overview of identification, distribution, physiology, and natural history of owls, hawks, and eagles. Learn about falconry, rehabilitation, captive breeding, and reintroduction. Includes a tour of the University of Minnesota Gabbert Raptor Center and a full-day field trip to Duluth to see migrating raptors (**Oct. 16; participants provide own transportation and may choose to carpool**). (Offered in cooperation with the Bell Museum of Natural History. Limited to 25)

Fall Spec Term, ★Sec 1, W, 6:30-8:30, Oct. 13-Nov. 3 (4 meetings plus field trip), GRaptCtr 120, StP Campus. *No late fee through Oct. 6.*

(Mark Martell, a staff member of the Gabbert Raptor Center since 1981, has an M.S. in wildlife conservation from the University of Minnesota. He is a falconer and has done field work with bald eagles, burrowing owls, osprey, and peregrine falcons)

CSch 0528 LATE SPRING ORNITHOLOGY: AN INTRODUCTION TO THE BIRDS OF MINNESOTA. No credit, \$137 (age 62 and Bell Museum members, \$123.30).

Get acquainted with Minnesota's resident and late spring migrant birds. Designed to help those interested in birds learn general field identification skills and basic ornithological concepts. Discussions will explore such topics as breeding biology, evolution of birds, migration, and bird song. Learn the characteristics used to identify birds in the lab through the use of museum study specimens and bird slides; identify birds using song, habitat, and behavior characteristics during two full-day and two half-day field trips (**May 7, 14, 21, 28; participants provide own transportation and may choose to carpool**). Binoculars and a bird identification guide are essential. (Offered in cooperation with the Bell Museum of Natural History. Limited to 20)

Spring Spec Term, ★Sec 1, W, 7-9, Apr. 27-May 25 (5 meetings plus 4 field trips), Ecology 150C, StP Campus. *No late fee through Apr. 20.*

(John Klicka is a graduate student in the Department of Ecology, Evolution, and Behavior at the University of Minnesota. His fieldwork in Mexico, Texas, and Alaska has led to research concerning the evolution and speciation of birds)

CSch 0529 MARINE MAMMALS: BIOLOGY AND BEHAVIOR. No credit, \$51 (age 62 and Minnesota Zoo members, \$45.90).

Of all animals, few are held in as much awe as those that live in the sea, particularly cetaceans (e.g., whales, dolphins, and porpoises). Explore the unique adaptations of marine mammal groups including social organization, behavior, and learning. Students have the opportunity to closely observe bottle-nose dolphins during a behind-the-scenes tour with the Minnesota Zoo's dolphin trainers. (Offered in cooperation with the Minnesota Zoo. Limited to 20)

Spring Spec Term, ★Sec 1, Sa, 9 a.m.-12:30, May 7, 14 (2 meetings), Minnesota Zoo, 13000 Zoo Blvd., Apple Valley (meet in lobby). *No late fee through Apr. 29.*

(Brian Joseph, D.V.M., is director of biological programs at the Minnesota Zoo)

CSch 0530 SHARKS: REALITIES AND MYTHS. No credit, \$51 (age 62 and Minnesota Zoo members, \$45.90).

Sharks are perhaps the least understood member of the animal kingdom. For countless years they have inspired fear, fascination, and a daunting array of misconceptions. Dispel the myths and learn the truth about this fascinating marine creature while focusing on the latest research. Examine shark behavior, biology, commercial uses, and looming threats to their survival. Observe closely several species of reef sharks during a behind-the-scenes tour of the Minnesota Zoo's coral reef exhibit. (Offered in cooperation with the Minnesota Zoo. Limited to 20)

Winter Spec Term, ★Sec 1, Sa, 9 a.m.-12:30, Jan. 29, Feb. 5 (2 meetings), Minnesota Zoo, 13000 Zoo Blvd., Apple Valley (meet in lobby). *No late fee through Jan. 21.*

(See Brian Joseph's biography in CSch 0529)

CSch 0531 THE WAYS OF MINNESOTA'S FISHES. No credit, \$66 (age 62 and Bell Museum members, \$59.40).

What kinds of fishes live in Minnesota? How do they fit into the web of life in our streams and lakes? What do a 10-pound walleye and a 0.02-ounce least darter have in common? Do sturgeons live as long as humans? How does a bluegill "decide" what to eat? What do fishes tell us about the health of outdoor Minnesota? Explore answers to these and many other questions about the ecology and natural history of Minnesota's fishes. Presumes no prior training, just a curiosity about how nature works and an interest in fish. *Fishes of the Minnesota Region* is the supplemental text for the course. Includes a half-day field trip (**Oct. 9; participants provide own transportation and may choose to carpool**). (Offered in cooperation with the Bell Museum of Natural History. Limited to 20)

Fall Spec Term, ★Sec 1, W, 6:30-8:30, Oct. 6-20 (3 meetings plus field trip), BellMus 3 (use Auditorium entrance facing Church Street). *No late fee through Sept. 29.*

(Jay Hatch is an associate professor of biology in the General College at the University of Minnesota and associate curator of ichthyology at the Bell Museum. His research interests include the natural history of and human impact on freshwater fishes)

CSch 0532 ANIMAL BEHAVIOR. No credit, \$65 plus \$5 special fee. Total \$70 (age 62 and Minnesota Zoo and Bell Museum members, \$58.50 plus \$5 special fee. Total \$63.50)

The behavior of animals is much more complex than most people realize. This class uses a multifaceted approach to learning basic concepts about animals: lectures, movies, demonstrations, and a field trip. Subjects include the why and how questions of animal behavior, learning, courtship and reproductive behavior, territoriality and dominance hierarchies, and the costs and benefits of social and solitary living. Many of the topics will be vividly demonstrated during a half-day field trip to the Minnesota Zoo (**Apr. 30**) to observe macaques, ducks, gibbons, otters, and other Zoo inhabitants. (Offered in cooperation with the Minnesota Zoo and the Bell Museum of Natural History. Limited to 25)

Spring Spec Term, ★Sec 1, W, 6:30-8:30, Apr. 6-27 (4 meetings plus field trip), BellMus 175 (use Auditorium entrance facing Church Street). *No late fee through Mar. 30.*

(Susan Evarts received her Ph.D. in animal behavior from the University of Minnesota. Her research interests include mating systems and breeding behavior of waterfowl)

CSch 0533 BIG CATS OF THE WORLD: BIOLOGY, BEHAVIOR, AND CONSERVATION ISSUES. No credit, \$51 (age 62 and Minnesota Zoo members, \$45.90).

Lions, tigers, and cheetahs—powerful members of the feline family—instill respect and fear in the human imagination. Yet despite their secretive nature these big cats face the threat of extinction due to habitat destruction and poaching. Examine the unique adaptations of each group including habitat preferences, solitary versus social group strategies, and predatory specializations. Discover the similarities and differences between the larger cats and their smaller relatives, including the common domestic cat. Using the tiger as a model, explore modern conservation strategies in zoos helping to preserve these magnificent carnivores. (Offered in cooperation with the Minnesota Zoo. Limited to 25)

Fall Spec Term, ★Sec 1, Sa, 9 a.m.-12:30, October 2, 9 (2 meetings), Minnesota Zoo, 13000 Zoo Blvd., Apple Valley (meet in lobby). *No late fee through Sept. 24.*

(Ron Tilson is director of the conservation office and coordinator of the Global Tiger exhibit at the Minnesota Zoo. He is also a professor of conservation biology and wildlife and fisheries at the University of Minnesota)

CSch 0534 FALL WILDFLOWERS AND GRASSES OF MINNESOTA. No credit, \$120 (age 62 and Bell Museum members, \$108).

Fall offers new challenges to wildflower enthusiasts as asters and goldenrods bloom abundantly in prairies, open woods, and wetlands. Explore and study the beautiful autumn plant life of central Minnesota through lectures, slides, and field trips. Special emphasis is given to distinguishing asters, goldenrods, and grasses using field guides and simple keys. Identification skills will be sharpened through keying plants by their showy seed heads and fruits. Two half-day field trips (**Oct. 2, 23**) and one full-day field trip (**Oct. 9; locations dependent on where plants are in bloom. Participants provide own transportation and may choose to carpool**). (Offered in cooperation with the Bell Museum of Natural History. Limited to 25)

Fall Spec Term, ★Sec 1, T, 6:30-8:30, Sept. 21-Oct. 26 (5 meetings plus 3 field trips—no class Oct. 5), BioSci 245, StP Campus. *No late fee through Sept. 14.*

(C. Colston Burrell is a landscape designer, consultant, writer, and photographer. He has an M.S. in horticulture and is currently a graduate student in landscape architecture at the University of Minnesota. He has a lifelong interest in the growing and propagation of native plants)

Noncredit Courses

CSch 0535 A CELEBRATION OF THE SEASON: SPRING WILDFLOWERS OF MINNESOTA. No credit, \$120 (age 62 and Bell Museum members, \$108).

With winter's snow barely melted, native wildflowers begin blooming in a wide and wonderful array of color and form. Enjoy the blossoming of spring in Minnesota through the wildflowers of woodland, prairie, and bog. Evening sessions introduce the diversity of wildflowers found in the state and how to identify them using field guides and simple keys. Two half-day Saturday field trips (**Apr. 23, 30**) and one all-day Saturday field trip (**May 14**) enable participants to test their botanical skills in three flower-rich areas (**locations dependent on conditions. Participants provide own transportation and may choose to carpool.**) (Offered in cooperation with the Bell Museum of Natural History. Limited to 25)

Spring Spec Term, ★Sec 1, W, 6:30-8:30, Apr. 13-May 11 (5 meetings plus 3 field trips), BellMus 3 (use Auditorium entrance facing Church Street).

No late fee through Apr. 6.

(See C. Colston Burrell's biography in CSch 0534)

CSch 0536 SUPERMARKET BOTANY. No credit, \$52 (age 62 and Bell Museum members, \$46.80).

From cabbages to cauliflower, kiwis to kumquats, and fruits to vegetables! A trip down the supermarket produce aisle to help people understand the use of various plants in our everyday life. Learn to tell the difference between a sweet potato and a yam. Look at plants from the botanical viewpoint to see what part of the plant is consumed, why that part is used, how particular plants became part of our diet and culture, and future trends in plant use. (Offered in cooperation with the Bell Museum of Natural History. Limited to 25)

Fall Spec Term, ★Sec 1, T, 6:30-8:30, Oct. 26-Nov. 16 (4 meetings), BellMus 175 (use

Auditorium entrance facing Church Street). *No late fee through Oct. 19.*

(Brother Tom Sullivan, FSC, received his doctorate in plant biology from the University of Minnesota. He is provincial of the Christian Brothers of the Upper Midwestern States with over 20 years of teaching experience and a lifelong interest in economic botany)

CSch 0539 INTRODUCTION TO WILD MUSHROOMS. No credit, \$65 (age 62 and Bell Museum members, \$58.50).

Minnesota's wild mushrooms are easily overlooked, yet they actually outnumber plant species and serve vital roles in nature as silent recyclers, symbionts, and parasites. Explore the diversity of the larger members of the fungal kingdom: gilled mushrooms, boletes, polypores, puffballs, jelly fungi, and others. Discussions include the best edibles (one is the official state mushroom), the poisonous "toadstools," methods for safe collection and identification, use of keys, fungal lifestyles, and plant associations. Various mushroom field guides are discussed. Includes two half-day field trips to parks near the Twin Cities for mushroom hunting forays (**Sept. 25, Oct. 2; extra cost for state park entry fee; participants provide own transportation and may choose to carpool.**) (Offered in cooperation with the Bell Museum of Natural History. Limited to 20)

Fall Spec Term, ★Sec 1, Th, 6:30-8:30, Sept. 23-

Oct. 7 (3 meetings plus 2 field trips), BioSci 245, StP Campus. *No late fee through Sept. 16.*

(Pat Leacock is a doctoral student in plant biology at the University of Minnesota currently studying the systematics of "milk mushrooms." He is head of the identification committee and a former president of the Minnesota Mycological Society)

CSch 0542 IT ALL STARTS WITH AN EGG: INTRODUCTION TO DEVELOPMENTAL BIOLOGY. No credit, \$65 (age 62, \$58.50).

Frog or fruit fly, mouse or man, all higher organisms develop from a single fertilized egg. Some of the most compelling questions in modern biology ask how the molecular information in this one cell is ultimately expressed to generate a complete, complex animal. What decisions are involved in different cells taking on different fates? How do cells in the embryo find their way to their correct position? Why are the mother's contributions uniquely important to her offspring's development? These questions are most easily answered with simple systems. Explore themes of developmental biology emerging from research on animal systems including fruit fly (*D. melanogaster*) and nematode (*C. elegans*), and how findings from these systems relate to the greatest challenge of all—understanding human development. (Limited to 30)

Winter Spec Term, ★Sec 1, T, 6:15-8:15, Jan. 18-Feb. 15 (5 meetings), McNH 198, StP Campus.

No late fee through Jan. 11.

(Todd Starich is a postdoctoral associate in the Department of Genetics and Cell Biology at the University of Minnesota. His current research is on nervous system development in nematodes)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSch 0551 MINNESOTA GEOLOGY: 3.6 BILLION YEARS AND COUNTING. No credit, \$165 (age 62, \$148.50).

Discover where volcanoes erupted onto a lifeless landscape, where an inland sea teemed thick with algae, where a mountain chain rose to unrivaled heights, where a great valley was filled with lakes of lava, where oceans lapped against white sand beaches, and where mile-thick ice caps slowly carved a new landscape. Discover the long, diverse, and often calamitous geologic history of Minnesota. Includes two all-day field trips to the Minnesota River Valley (April 30) and to local areas (May 21), and a weekend trip to northeastern Minnesota (May 13-15) which involves 1-2 nights camping in state parks (additional cost of about \$15 for group meals and camping fees for weekend trip; participants provide own camping equipment and transportation and may choose to carpool). (Limited to 25)

Spring Spec Term, ★Sec 1, Th, 6:30-8:30, Apr. 21-May 19 (4 meetings plus 3 field trips—no class May 5), FordH 170. *No late fee through Apr. 14.*

(*Jim Miller received his Ph.D. from the University of Minnesota and is a senior geologist at the Minnesota Geological Survey. He specializes in the billion-year-old geology of the Lake Superior region*)

CSch 0552 DRIFTING CONTINENTS/EXPANDING OCEANS: AN INTRODUCTION TO THE DYNAMIC EARTH. No credit, \$42 (age 62, \$37.80).

Although geology is truly an "ancient" science, our understanding of the forces and processes that have shaped the earth over its 4.5 billion year history is a recent revelation. Learn about milestones in geologic thought which ultimately led to the breakthrough theory of plate tectonics just 30 years ago, and how this unifying theory explains the ever-changing landscape of the earth's surface and the diversity of life that inhabits it. Learn why the Himalayas are the highest mountains in the world, why the Pacific Ocean is surrounded by volcanos called the ring of fire, and why California is so prone to earthquakes and Minnesota is not. (Limited to 30)

Winter Spec Term, ★Sec 1, Th, 6:30-8:30, Jan. 13-27 (3 meetings), FordH 170. *No late fee through Jan. 6.*

(*See Jim Miller's biography in CSch 0551*)

CSch 0553 CAVES: HYDROGEOLOGY AND THE HUMAN SPIRIT. No credit, \$72 (age 62 and Bell Museum members, \$64.80).

Explore the fascinating world of caves. Discover how caves are formed and the role they have played for tens of thousands of years in human history. Learn about geological processes of cave formation and the unusual ways that ground water moves in limestone. Through slides of cave paintings, petroglyphs, and pottery found in caves in France, Spain, the Yucatan, and central Kentucky, enter a mysterious underworld of imagination and reality. A final full-day field trip (Oct. 16) will introduce you to Minnesota's largest natural caves (participants provide own transportation and may choose to carpool). (Offered in cooperation with the Bell Museum of Natural History. Limited to 30)

Fall Spec Term, ★Sec 1, M, 6:30-8:30, Oct. 4, 11 (2 meetings plus field trip), BellMus 3 (use Auditorium entrance facing Church Street). *No late fee through Sept. 27.*

(*Calvin Alexander, a professor in the Department of Geology and Geophysics at the University of Minnesota, is an international expert in karst hydrogeology and a cave enthusiast. Roy Jameson, a Ph.D. candidate in the Department of Geology and Geophysics, has studied caves in the United States, Central America, and Europe for 20 years*)

CSch 0560 QUARKS TO QUASARS: AN OVERVIEW OF 20TH-CENTURY PHYSICS. No credit, \$118 (age 62, \$106.20).

From the theory of relativity to string theory, the discoveries of this century have dramatically altered our understanding of the physical world. This introductory overview of the physics and cosmology of the 20th century includes relativity; the big bang; quantum theory; atomic, nuclear, and elementary-particle physics; nuclear energy; and modern unification theories. There will also be a discussion of how modern physics has influenced our lives and changed our view of the world. Lectures will be illustrated with demonstrations and visual aids. Emphasis will be on a qualitative and conceptual understanding of the ideas and concepts of modern physics, and no background in math or physics is required. Students are asked to purchase one textbook. (Limited to 30)

Fall Spec Term, ★Sec 1, Th, 6:15-8:15, Sept. 30-Nov. 11 (7 meetings), Phys 210. *No late fee through Sept. 23.*

(*Roger S. Jones is an associate professor of physics at the University of Minnesota. His books, Physics as Metaphor and Physics for the Rest of Us (text for the course), deal with the metaphorical and idolatrous character of science while explaining the major concepts of modern physics*)

Noncredit Courses

CSch 0565 DAWN OF A NEW AGE: A SHORT HISTORY OF SPACE EXPLORATION. No credit, \$72 (age 62, \$64.80).

As this is written (spring 1993), Ulysses is climbing toward a rendezvous with poles of the sun, Mars Observer is on its way to the red planet, Galileo is photographing asteroids along its path to Jupiter, Magellan has just about finished its radar mapping of Venus, and Space Telescope is probing distant galaxies that our spacecraft will never reach. These and other explorations of the present are built on the scientific and engineering legacy of earlier missions by the world's spacefaring nations: Mariner, Pioneer, Apollo, Skylab, Viking, Voyager, Vega, Venera, Phobos, Suisei/Sakigake, Giotto, and many more. A new frontier has opened to us, and with it a new science and a new technology. Look back over the brief four-decade international history of our leap away from Earth, and forward to the benefits and the problems of future space exploration and exploitation by robots and by humans. (Limited to 30)

Winter Spec Term, ★Sec 1, W, 6:15-8:15, Feb. 16-Mar. 9 (4 meetings), Phys 131. *No late fee through Feb. 9.*

(Robert Pepin, professor in the School of Physics and Astronomy at the University of Minnesota, has carried out research in the space sciences for the past 25 years. He was a science advisor in mission control for the last four Apollo missions to the moon, and worked with NASA on planning strategies for planetary exploration)

CSch 0570 THE SCIENCE OF CHAOS: A NEW WINDOW ON BOTH THE ORDINARY AND THE FANTASTIC. No credit, \$68 (age 62, \$61.20).

During the past 30 years, an entirely new mathematical discipline has arisen that is radically changing the way we view the world, from the beating of the human heart to the ever-changing weather. A new vocabulary is being invented: fractals, self-similarity, strange attractors, chaos. Many of the basic concepts and most of the real-world examples of mathematical chaos are readily accessible to the nonspecialist. This course is for those who want to see the beauty of the world with different eyes, as well as for those who just want to get in on some of the fun. Household objects and computer demonstrations are used to help everyone discover patterns of chaos for themselves. Includes opportunity for hands-on experimentation with computer simulations. Recommended texts include *Exploring Chaos* by Nina Hall and *Fractals for the Classroom, Vol. I & II* by Peitgen, Jürgens, and Saupe. (Limited to 35)

Spring Spec Term, ★Sec 1, W, 6:15-8:15, Apr. 13-May 4 (4 meetings), FordH 130. *No late fee through Apr. 6.*

(Larry Gray is a mathematics professor at the University of Minnesota. His research concerns mathematical models of systems that contain a large number of randomly interacting components, ranging from ecological models to systems of subatomic particles)

CSch 0572 THE ORIGIN OF MATHEMATICS: FROM EGYPT TO THE MIDDLE AGES. No credit, \$74 (age 62, \$66.60).

Why do we count and perform arithmetic the way we do? What were the origins of modern mathematics and how were they influenced by the culture and technology of ancient civilizations? Examine the history of mathematics including the origins of geometry in Egypt, the concept of proof as developed in Greece, the numeric system as developed in India, and the preservation and refinement of the practice of mathematics in the Middle East during the Dark Ages of Europe. Develop an understanding of how modern mathematics is influenced by the logic, arithmetic, algebra, and geometry techniques of ancient mathematics. (Limited to 30)

Winter Spec Term, ★Sec 1, W, 6:30-8:30, Jan. 19-Feb. 16 (5 meetings), EE/CSci 2260. *No late fee through Jan. 12.*

(Subash Shankar is a doctoral candidate in the Department of Computer Science at the University of Minnesota and a computer engineer at Honeywell. His research area is computer architecture and artificial intelligence)

CSch 0576 A LOOK AT THE SUPER-COMPUTER AND ITS USES: A MACHINE FOR THE INFORMATION AGE. No credit, \$96 (age 62, \$86.40).

Examine the "what" (overview of the general architecture) and the "why" (introduction to the kinds of research questions that cannot be answered without it) of a supercomputer. Learn about the components (microprocessors, types of data storage, interconnections), ways to increase the speed (pipelining, interleaved memory), principles of design (the Cray's architecture, for example), and what guides the development of the next generation of supercomputers, including massively parallel processors. Then hear researchers discuss the use of the supercomputer to investigate problems ranging from society's difficulties in recycling to what is occurring in the Earth's interior. Two professors in forest products discuss their analysis of the increased use of recycled materials on the process of paper production and on the structure and quality of the paper produced; a geophysicist discusses the role played by supercomputers in studying and visualizing processes in the Earth's interior; a theoretical chemist using quantum theory explains from a layperson's perspective how he ex-

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amines the properties and chemical reactions of molecules at the level of the atoms and their electronic structure; and a professor in laboratory medicine describes his work on elucidating the structure of a very large and important protein, information which could be valuable in understanding disease or designing new drugs. Includes tour of the Minnesota Supercomputer Center. (Offered in cooperation with the Minnesota Supercomputer Institute. Limited to 45)

Fall Spec Term, ★Sec 1, T, 6:15-8:15, Oct. 5-Nov. 9 (6 meetings), Minnesota Supercomputer Institute, 1200 Washington Ave. South, Mpls (park in front lot of building). *No late fee through Sept. 28.*

(Philip Cheung and Taek Mu Kwon are assistant professors in the Department of Computer Engineering at the University of Minnesota, Duluth. From the University of Minnesota, Twin Cities: Robert Rouda, professor, and Henry Wells, Jr., associate professor, Department of Forest Products; David Yuen, professor, Department of Geology and Geophysics; Christopher Cramer, assistant professor, Department of Chemistry; and William Gleason, assistant professor, Department of Laboratory Medicine and Pathology)

CSch 0577 THE HISTORY OF COMPUTERS: APPROACHES TO COMPUTATION. No credit, \$74 (age 62, \$66.60).

What does it mean to program a computer? For centuries people have attempted to develop machines to perform boring rote computations mechanically. The modern digital computer draws from a rich history of theoretical and real machines. Trace the history of computation and the numerous past approaches to mechanizing computation and programming these machines. Examine the techniques that modern digital computers have borrowed from theoretical models of computing and from other machines like analog computers and the Babbage Difference Engine. (Limited to 30)

Spring Spec Term, ★Sec 1, M, 6:30-8:30, Apr. 11-May 9 (5 meetings), EE/CSci 3115. *No late fee through Apr. 4.*

(Subash Shankar is a doctoral candidate in the Department of Computer Science at the University of Minnesota and a computer engineer at Honeywell. His research area is computer architecture and artificial intelligence)

CSch 0581 WETLANDS: MOSQUITO-RIDDEN WASTELANDS OR ECOLOGICAL TREASURES. No credit, \$106 (age 62 and Bell Museum members, \$95.40).

Wetlands are an important and irreplaceable part of Minnesota's natural heritage. Explore wetland form and function including classification, flora and fauna, hydrology, and influence on global processes. Discuss current philosophies surrounding wetland preservation, exploitation, and policy. Visit a sphagnum bog, cedar swamp, cattail marsh, and alkaline fen on two full-day field trips (**May 14, 21; participants provide own transportation and may choose to carpool**). (Offered in cooperation with the Bell Museum of Natural History. Limited to 25)

Spring Spec Term, ★Sec 1, W, 6:30-8:30, May 4-25 (4 meetings plus 2 field trips), BellMus 3 (use Auditorium entrance facing Church Street). *No late fee through Apr. 27.*

(Charlotte Bryant is a graduate student in the Department of Ecology, Evolution, and Behavior at the University of Minnesota. Her research focuses on nutrient cycling and decomposition in different wetland types, as well as on long-term trends in wetland plant communities)

CSch 0584 DROUGHTS, FLOODS, AND GLOBAL WARMING: MONITORING MINNESOTA'S CHANGING CLIMATE. No credit, \$82 (age 62, \$73.80).

Climate describes the environment of the past, and weather describes the atmospheric conditions now and in the very near future. Climate is a natural resource which, along with soil and water, determines the distribution of natural ecosystems and human enterprises such as farms and cities. Learn about the natural processes that drive climate and how local climates are influenced by the activities of modern civilizations. Discuss issues related to weather and climate, including: uncertainty in forecasting; mitigation of such climatic impacts as floods and droughts; global warming; wind and solar energy sources; and waste management strategies. Includes a visit to the Climatological Observatory on the St. Paul campus and to the National Weather Service Forecast Office at the Minneapolis-St. Paul International Airport. (Limited to 25)

Fall Spec Term, ★Sec 1, W, 6:15-8:15, Oct. 13-Nov. 10 (5 meetings), BorH 335, StP Campus. *No late fee through Oct. 6.*

(Mark Seeley is a professor and climatologist with the Minnesota Extension Service and the Department of Soil Science at the University of Minnesota and coordinator of the Minnesota Cooperative Agricultural Weather Advisory Program. His research interests include climatology, agricultural meteorology, and remote sensing)

Noncredit Courses

CSch 0589 A GREEN MARSHALL PLAN? IMPACT OF U.S. FOREIGN POLICY ON THE GLOBAL ENVIRONMENT. No credit, \$67 (age 62, \$60.30).

Since the end of the Cold War, there have been calls for the U.S. to use its power and influence to lead a global campaign for environmental improvement. What does the recent history of U.S. foreign policy suggest about the prospects for such an effort? To date, how have U.S. objectives and military intervention affected development and the local environments in "Third World" cultures? How do development patterns encouraged by the U.S. affect the global environment, and how might these policies be altered to lessen global environmental problems? Investigate the environmental impact of U.S. Cold War policies in Africa, Asia, and Latin America, and examine contemporary debates about debt-for-nature swaps and free trade agreements. (Limited to 25)

Spring Spec Term, ★Sec 1, M, 6:15-8:15, Apr. 11-May 9 (5 meetings), Arch 35. *No late fee through Apr. 4.*

(Jim Glassman completed his doctoral dissertation on social ecology and U.S. history at the University of Minnesota. He currently teaches philosophy and history at Metropolitan State University)

The Practical Scholar course offerings

University Access

PSch 0600 STUDY SKILLS. No credit, \$32 (age 62, \$28.80).

Thinking about returning to school? About to begin your first class? Already in school and having problems with your studies? Learn basic techniques to budget your time, develop efficient study habits, get the most from lectures and textbooks, take and organize notes, and study for and take exams. Includes lecture, classroom discussion, and practical exercises. (Limited to 25)

Fall Spec Term, ★Sec 1, Sa, 9 a.m.-1, Sept. 18 (1 meeting), AmundH 116. *No late fee through Sept. 10.*

Spring Spec Term, ★Sec 2, Sa, 9 a.m.-1, Apr. 2 (1 meeting), FordH 150. *No late fee through Mar. 25.*

(Jan DeNoble has taught classes and seminars for the University of Minnesota, government agencies, and private industry)

PSch 0603 OVERCOMING EMOTIONAL BLOCKS TO LEARNING. No credit, \$47 (age 62, \$42.30).

Many adults want to finish their college degrees or complete additional professional training but feel blocked by fears of failure (or success), anxiety, or lack of confidence in their academic ability. Explore the sources of these emotional blocks to academic success and how to overcome them. Areas covered include modifying personal belief systems, using positive self-talk, managing anxiety, and overcoming difficult learning histories. (Limited to 20)

Fall Spec Term, ★Sec 1, Th, 6-8, Oct. 7-21 (3 meetings), EddyH 102. *No late fee through Sept. 30.*

(Glenn Hirsch is a licensed psychologist in private practice and a senior staff psychologist at University Counseling and Consulting Services)

Noncredit Courses

PSch 0605 DECIDING TO ATTEND GRADUATE SCHOOL.

No credit, \$17 (age 62, \$15.30). The decision to pursue a graduate degree can be difficult and involves assessing the value of a graduate degree to you as well as selecting an appropriate program. Explore the impact of attending graduate school on both your professional and personal life. Clarify your life/career goals, evaluate your options, and develop a plan of action. Includes discussion of factors to consider and questions to ask in researching possible graduate programs. (Limited to 30)

Fall Spec Term, ★Sec 1, Sa, 10 a.m.-12, Oct. 2 (1 meeting), Arch 15. *No late fee through Sept. 24.*

Spring Spec Term, ★Sec 2, Sa, 10 a.m.-12, Apr. 2 (1 meeting), Arch 15. *No late fee through Mar. 25.*

(Theresa Maximovitch is a career management consultant for Career Dynamics, Inc. and a doctoral candidate in counseling psychology at Stanford University)

PSch 0606 APPLYING TO AND FINANCING GRADUATE SCHOOL.

No credit, \$25 (age 62, \$22.50).

Early planning is essential in applying to and successfully financing your graduate education. Many application deadlines are six months or more before the term begins. The first part of this session examines how the graduate school admission process works, when and where to apply, and how to put together an effective application. In the second half find out what types of aid and financial support are available including loans, grants, scholarships, fellowships, and assistantships. Includes time for questions. (Limited to 45)

Fall Spec Term, ★Sec 1, Sa, 9 a.m.-12, Oct. 16 (1 meeting), Arch 30. *No late fee through Oct. 8.*

Spring Spec Term, ★Sec 2, Sa, 9 a.m.-12, Apr. 16 (1 meeting), Arch 45. *No late fee through Apr. 8.*

(Dennis Clayton, Ph.D., is assistant to the dean of the Graduate School at the University of Minnesota. Rose Miskowicz is financial aid counselor for graduate and professional students, University of Minnesota. Alison Skoberg is associate director, Graduate School Fellowship Office, University of Minnesota)

PSch 0608 ASSESSING MATH SKILLS FOR THE GRE AND GMAT FOR GRADUATE ADMISSIONS EXAMS.

No credit, \$31 (age 62, \$27.90).

This three-hour clinic is designed to diagnose your readiness to take the mathematics portion of the Graduate Record Examination (GRE) and the Graduate Management Admission Test (GMAT). It will provide a description of the mathematics portions of both tests, a self-scored test of your mathematics skill levels as they relate to the GRE and GMAT, and information on what to do next with regards to studying for the tests (what to study and classes to take to help prepare for the tests). (Limited to 30)

Fall Spec Term, ★Sec 1, W, 6-9, Oct. 20 (1 meeting), AmundH 116. *No late fee through Oct. 13.*

(Barbara Clothier is the mathematics counselor at Macalester College. She is also an instructor of mathematics and statistics. Her research interests are in educational psychology and developmental mathematics education)

PSch 0609 REVIEWING MATH FOR THE GRE OR GMAT.

No credit, \$108 plus \$12 special fee. Total \$120 (age 62, \$97.20 plus \$12 special fee. Total \$109.20). *Includes study materials.*

Designed to prepare you for the mathematics portions of the Graduate Record Examination (GRE) and the Graduate Management Admission Test (GMAT). The course is intended for people who need to brush up on their math skills and who would like some guidance and practice in solving the types of problems encountered in the GRE and GMAT. Topics covered will include material from arithmetic, algebra, and geometry, and word problems from these areas. Students needing an extensive review of these subjects should consider taking PSch 0661, 0662, and/or 0663. Materials distributed at the first class meeting. (Limited to 30)

Fall Spec Term, ★Sec 1, Sa, 9:30 a.m.-12, Oct. 30-Nov. 20 (4 meetings), AmundH 116. *No late fee through Oct. 22.*

Spring Spec Term, ★Sec 2, W, 6-8:30, Mar. 30-Apr. 20 (4 meetings), AmundH 116. *No late fee through Mar. 23.*

(See Barbara Clothier's biography in PSch 0608)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

PSch 0610 PREPARING FOR THE GRE. No credit, \$180 plus \$25 special fee. Total \$205 (age 62, \$162 plus \$25 special fee. Total \$187). *Includes study materials.*

Become familiar with the various types of verbal, quantitative, and analytical questions presented on the Graduate Record Examination (GRE) General Test. In addition to learning test-taking strategies, participants will work with test simulation exercises on reading comprehension, antonyms, analogies, sentence correction, problem solving, quantitative comparison, data interpretation, and analytical/logical reasoning. Materials especially prepared for this seminar format distributed at the first class session. (Limited to 40)

Fall Spec Term, ★Sec 1, M, 5:30-9:30, Sept. 13-Oct. 4 (4 meetings), AmundH 120. *No late fee through Sept. 7.*

Fall Spec Term, ★Sec 2, T, 5:30-9:30, Nov. 9-30 (4 meetings), AmundH 240. *No late fee through Nov. 2.*

Winter Spec Term, ★Sec 3, Sa, 8:30 a.m.-12:30, Jan. 8-29 (4 meetings), AmundH 156. *No late fee through Dec. 31.*

Winter Spec Term, ★Sec 4, M, 5:30-9:30, Mar. 7-Apr. 4 (4 meetings—no class Mar. 21), AmundH 240. *No late fee through Feb. 28.*

Spring Spec Term, ★Sec 5, T, 5:30-9:30, Apr. 26-May 17 (4 meetings), AmundH 240. *No late fee through Apr. 19.*

(Brad Purdy, instructor for the verbal section, has a law degree and is currently enrolled in the MBA program at the University of Minnesota. He is a staff member in the Learning and Academic Skills Center, where his responsibilities include teaching basic study and communication skills, time management skills, and strategies for taking the GMAT, GRE, and LSAT. Tom Lamb, instructor for the math section, has an MBA from the Carlson School of Management and has previously taught math courses in the General College at the University)

PSch 0611 PREPARING FOR THE GMAT. No credit, \$180 plus \$25 special fee. Total \$205 (age 62, \$162 plus \$25 special fee. Total \$187). *Includes study materials.*

Learn test-taking strategies for dealing with the verbal, quantitative, and analytical sections of the Graduate Management Admissions Test (GMAT). After being introduced to proven methods for dealing with each of the question types, participants will work with test simulation exercises in critical reasoning, problem solving, data sufficiency, sentence correction, and reading comprehension. Materials especially prepared for this seminar format distributed at the first class session. (Limited to 40)

Fall Spec Term, ★Sec 1, T, 5:30-9:30, Sept. 14-Oct. 5 (4 meetings), AmundH 156. *No late fee through Sept. 7.*

Fall Spec Term, ★Sec 2, T, 5:30-9:30, Dec. 14, Jan. 4; and Sa, 8:30 a.m.-12:30, Dec. 18, Jan. 8 (4 meetings), AmundH 162. *No late fee through Dec. 7.*

Winter Spec Term, ★Sec 3, Sa, 8:30 a.m.-12:30, Feb. 12-Mar. 5 (4 meetings), AmundH 120. *No late fee through Feb. 4.*

Spring Spec Term, ★Sec 4, Th, 5:30-9:30, May 12-June 2 (4 meetings), AmundH 240. *No late fee through May 5.*

(See instructors' biographies in PSch 0610)

PSch 0613 PREPARING FOR THE LSAT. No credit, \$180 plus \$25 special fee. Total \$205 (age 62, \$162 plus \$25 special fee. Total \$187). *Includes study materials.*

Learn test-taking strategies and practice working with the various types of questions presented on the Law School Admissions Test (LSAT). Review logical and verbal reasoning, sharpen reading comprehension, practice solving analytical reasoning problems, brush up on parts of speech, word usage, and proper sentence structure, and learn a system to use to generate ideas for and complete the required 30-minute essay. After being introduced to proven methods for dealing with each of the question types, work with test simulation exercises. Materials especially prepared for this seminar format distributed at the first class session. (Limited to 40)

Fall Spec Term, ★Sec 1, M, 5:30-9:30, Nov. 1-22 (4 meetings), AmundH 240. *No late fee through Oct. 25.*

(See Brad Purdy's biography in PSch 0610)

Noncredit Courses

PSch 0620 GRAMMAR REFRESHER. No credit, \$90 plus \$3 special fee. Total \$93 (age 62, \$81 plus \$3 special fee. Total \$84).

Has it been too many years since you studied subjects, verbs, and all those other forgotten terms? Do you labor over sentences and agonize over paragraphs? Designed for people who had a strong background in grammar (however many years ago), but who would now like to review basic skills. It is intended for those considering returning to the classroom, those already in school and having problems with writing, and those who would like a refresher for personal correspondence. Review grammar, punctuation, sentence structure, and common problem areas. Format includes lecture, exercises, and student participation. Students should plan to spend a few hours each week completing homework assignments. (Limited to 20)

Fall Spec Term, ★Sec 1, T, 6-8, Sept. 28-Nov. 2 (6 meetings), VinH 6. *No late fee through Sept. 21.*

Winter Spec Term, ★Sec 2, T, 6-8, Jan. 25-Mar. 1 (6 meetings), LindH 203. *No late fee through Jan. 18.*

(Jan DeNoble has taught classes and seminars for the University of Minnesota, government agencies, and private industry)

PSch 0621 WORDS: MAKING THEM WORK FOR YOU—PART I. No credit, \$47 (age 62, \$42.30).

Designed for all people who want to increase their vocabulary and who enjoy working and playing with words. Includes Greek and Latin roots, words derived from these roots, and other useful words and word games. Appropriate for people who want to develop a richer vocabulary, and also for those planning to take undergraduate or graduate admissions exams or other tests requiring vocabulary skills. (Limited to 25)

Fall Spec Term, ★Sec 1, W, 12:15-1:15, Oct. 6-Nov. 10 (6 meetings), MacP. *No late fee through Sept. 29.*

Spring Spec Term, ★Sec 2, T, 6-7:30, Apr. 5-26 (4 meetings), FordH 40. *No late fee through Mar. 29.*

(See Jan DeNoble's biography in PSch 0620)

PSch 0622 WORDS: MAKING THEM WORK FOR YOU—PART II. No credit, \$47 (age 62, \$42.30).

A continuation of PSch 0621, but not limited to students who have taken that class. Focus on the definition, pronunciation, and usage of useful words, with word origins, the "families of words," and word games also included. Designed for people who want to increase their vocabulary and build word power,

and for those who enjoy working and playing with words. It's also appropriate for those planning to take undergraduate and graduate admissions exams or other tests requiring vocabulary skills. (Limited to 25)

Winter Spec Term, ★Sec 1, W, 12:15-1:15, Jan. 12-Feb. 16 (6 meetings), MacP. *No late fee through Jan. 5.*

(See Jan DeNoble's biography in PSch 0620)

PSch 0623 PUNCTUATION REVIEW. No credit, \$31 (age 62, \$27.90).

Should I use a comma or a semicolon? Does the period go inside or outside the closing quotation mark? How many spaces are there after a colon? If you're mystified by the ever-changing rules of punctuation, this course will help you sort it all out. The class includes discussion and exercises, as well as problem areas specified by the participants. Students are encouraged to bring their own writing in for comment and critique. (Limited to 20)

Spring Spec Term, ★Sec 1, W, 12:15-1:15, Apr.

20-May 11 (4 meetings), MacP. *No late fee through Apr. 13.*

(See Jan DeNoble's biography in PSch 0620)

PSch 0624 MAKING SENSE OF GRAMMAR AND PUNCTUATION. No credit, \$95 (age 62, \$85.50).

Whether correcting your own writing or completing a grammar exercise on a standardized test, it's easy to get stuck when a sentence doesn't look just right. Connecting with the basics of grammar and punctuation will help you learn how to make good choices when it comes to sentence construction. Designed for people who want to learn how to apply the basics of grammar and punctuation to everyday writing, or for individuals who are preparing for standardized tests (GMAT, LSAT, PPST, CEEB) that include a section on sentence correction. Participants use the *Prentice Hall Reference Guide to Grammar and Usage* (purchase at Minnesota Book Center, Williamson Hall, before the first class) to guide their discussion and work with practice exercises in class. (Limited to 25)

Spring Spec Term, ★Sec 1, Th, 6:15-8:15, Mar. 31-May 5 (6 meetings), EddyH 102. *No late fee through Mar. 24.*

(Brad Purdy has a law degree and is currently enrolled in the MBA program at the University of Minnesota. He is a staff member in the Learning and Academic Skills Center, where his responsibilities include teaching basic study and communication skills, time management skills, and strategies for taking the GMAT, GRE, and LSAT)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

PSch 0640 RAPID READING AND COMPREHENSION. No credit, \$112 (age 62, \$100.80).

For people with average to good reading potential who want to improve their reading speed and comprehension. Generally, the minimal gain is a doubling of original reading speed. Emphasis is on lifelong goals, which are achieved through lecture and classroom participation and practice. (Limited to 30)

Fall Spec Term, ★Sec 1, T, 6-9, Nov. 2-23 (4 meetings), JonesH 2. *No late fee through Oct. 26.*

(J. Michael Bennett has coordinated the introductory public speaking courses and currently coordinates the college reading courses in the Department of Rhetoric at the University of Minnesota. He frequently lectures and conducts seminars across the country in the areas of reading, writing, speaking, and listening)

First Step: Preparation for University Mathematics

A program designed especially for people who need to review or update their skills in mathematics. May also be useful for those who are anxious about mathematics or who encounter blocks in performing mathematics computations. Through a combination of course work and supportive services, students can overcome their fear of mathematics and master the level of mathematics they need or want. The program helps students deal with their attitudes about math at the same time they are working on their math skills. Classes include *Math Skills Assessment Clinic, Basic Mathematics Review, Elementary Algebra, and Intermediate Algebra.*

PSch 0660 MATH SKILLS ASSESSMENT CLINIC. No credit, \$31 (age 62, \$27.90).

The Assessment Clinic is the introductory step in the Math Preparation Program. It contains a brief discussion of math anxiety/avoidance, how it develops, and how it affects mathematics performance. A math skills test is given which allows students to determine their current levels of math skills. After self-scoring their tests, students will receive an interpretation of the results. Additional topics include an overview of the math program, a discussion of the nature of mathematics, and administration of the Math Anxiety Rating Scale. (The Practical Scholar offers another diagnostic clinic, PSch 0609, which is specifically designed for people who want to determine whether they are ready to take the math portions of the GRE or GMAT. See page 412) (Limited to 35)

Fall Spec Term, ★Sec 1, M, 6-9, Sept. 20 (1 meeting), NCCE 229. *No late fee through Sept. 13.*

(Douglas Robertson is a professor in the General College at the University of Minnesota. He has worked in the Math Preparation Program since 1977. He was one of the recipients of the 1989-90 Morse-Alumni Award for Outstanding Contributions to Undergraduate Education as well as the 1990 CEE Distinguished Teaching Award. His research interests are in developmental mathematics education)

PSch 0661 BASIC MATHEMATICS REVIEW. No credit, \$123 (age 62, \$110.70).

Instruction in basic mathematics including fractions, decimals, ratio and proportion, percentages, the metric system, and word problems from these areas. Option of taking self-graded quizzes to monitor progress during class. Class prepares students for PSch 0662 Elementary Algebra. (Limited to 30)

Fall Spec Term, ★Sec 1, W, 6-7:30, Sept. 29-Dec. 8 (11 meetings), VinH 314. *No late fee through Sept. 22.*

(See Douglas Robertson's biography in PSch 0660)

PSch 0662 ELEMENTARY ALGEBRA. No credit, \$168 (age 62, \$151.20).

Instruction in elementary algebra including signed numbers, solving equations, graphing, factoring, rational expressions, roots, and radicals. Option of taking self-graded quizzes to monitor progress during class. Prepares students for PSch 0663 Intermediate Algebra. (Limited to 30)

Winter Spec Term, ★Sec 1, W, 6-7:45, Jan. 5-Mar. 16 (11 meetings), VinH 314. *No late fee through Dec. 29.*

(See Douglas Robertson's biography in PSch 0660)

PSch 0663 INTERMEDIATE ALGEBRA. No credit, \$252 (age 62, \$226.80).

This second course in algebra covers rational expressions, radicals, roots, quadratic and rational equations and inequalities, conic sections, functions and relations, and exponential and logarithmic functions. Prepares students for Math 1031 College Algebra or Math 1051 Precalculus I. Since this is a second course in algebra, students who take this course must know the content of elementary algebra including linear equations and inequalities, exponents, factoring, elementary rational expressions, roots, and radicals (see PSch 0662). (Limited to 30)

Spring Spec Term, ★Sec 1, W, 5:45-8:45, Mar. 30-June 8 (11 meetings), VinH 314. *No late fee through Mar. 23.*

(See Douglas Robertson's biography in PSch 0660)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

Human Development

PSch 0800 ASSERTIVENESS TRAINING. No credit, \$69 (age 62, \$62.10).

Becoming assertive means not only standing up for one's rights in negative, confrontational situations, but also being able to express beliefs, feelings, and opinions in an honest, open, and appropriate way. Increase communication skills while reducing anxiety and feelings of resentment and guilt by learning to distinguish assertive behavior from both passive and aggressive behavior. In class, you will have the chance to experiment with ways to deal with day-to-day situations, choosing and practicing options that are the most effective for you. (Limited to 20)

Fall Spec Term, ★Sec 1, T, 10:15 a.m.-12:15, Sept. 28-Oct. 26 (5 meetings), Washburn Library, 5244 Lyndale Ave. South, Mpls. *No late fee through Sept. 21.*

(Paula Solon, Ph.D., is a psychologist in private practice)

PSch 0802 ENHANCING SELF-ESTEEM. No credit, \$62 (age 62, \$55.80).

Self-esteem is not a constant, but a feeling or image that we have of ourselves that fluctuates over time and across situations. Identify the thoughts, feelings, and behaviors that affect your sense of self and your relationships with others, and examine tools for building and maintaining a positive self-image. Through lectures, discussions, and group activities, participants learn specific steps for increasing self-acceptance, developing confidence, setting and achieving realistic goals, and overcoming barriers to change. Designed as an educational experience, not as a therapy group. (Limited to 20)

Fall Spec Term, ★Sec 1, Th, 10:15 a.m.-12:15, Sept. 30-Oct. 21 (4 meetings), Washburn Library, 5244 Lyndale Ave. South, Mpls. *No late fee through Sept. 23.*

(Laurel Haycock is a licensed psychologist and a doctoral student in the Counseling and Student Personnel Psychology Program at the University of Minnesota)

PSch 0804 PERFECTIONISM AND PROCRASTINATION. No credit, \$46 (age 62, \$41.40).

Do you find yourself putting things off when you know you shouldn't? Are you always in a rush to get things done at the last minute, and do you make excuses when things are late? Is nothing you do quite good enough to measure up to your standards? Through a combination of lectures and small group discussions, learn how these behaviors originate and mani-

fest themselves plus techniques to stop delaying tactics. Designed as an educational experience, not as a therapy group. (Limited to 25)

Spring Spec Term, ★Sec 1, W, 6-8, Apr. 6-20 (3 meetings), FordH 50. *No late fee through Mar. 30.*

(Debra Harless is a doctoral student in the Counseling and Student Personnel Psychology Program at the University of Minnesota. She has worked as a university counselor and instructor with an emphasis in the area of learning skills. Her research interests include learning and teaching styles)

PSch 0806 WHY A LIVING TRUST? No credit, \$18 (age 62, \$16.20).

Much has been written about the living trust as an alternative to guardianship and probate. *Money* magazine (Mar. 1989) recommends the revocable living trust as a precaution against the costs and abuses associated with guardianship. *Fortune* magazine (Feb. 25, 1991) and *Modern Maturity* (Sept./Oct. 1991) recommend the revocable living trust as a means of avoiding the costs and delays normally incurred in the probate process. Designed to answer your questions about living trusts, such as: What are they? How do they work? When should they be considered as an alternative to a will alone? (Limited to 30)

Fall Spec Term, ★Sec 1, T, 1-3, Nov. 16 (1 meeting), Walker Library, 2880 Hennepin Ave. South, Mpls. *No late fee through Nov. 9.*

(Larry Houk is a graduate of the University of Minnesota Law School. He has over 21 years' experience in the area of estate planning and trusts and has taught seminars on the subject to audiences nationwide)

PSch 0811 DYNAMICS OF ANGER AND ANGER MANAGEMENT. No credit, \$78 (age 62, \$70.20).

Anger is a signal, a message our needs or wants are not adequately being met, our rights are being violated, we are doing more or giving more than we can, or that, in some way, we are being hurt. Focus on the dynamics of anger. Learn how to express anger appropriately and learn anger management techniques. Includes, lecture, discussion, and in-class exercises. Designed as an educational experience, not as a therapy group. (Limited to 25)

Fall Spec Term, ★Sec 1, M, 6-8, Sept. 27-Oct. 25 (5 meetings), FordH 130. *No late fee through Sept. 20.*

(Paula Solon, Ph.D., is a psychologist in private practice)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

PSch 0812 RELATIONSHIP LOSS: A GUIDE THROUGH GRIEF INTO HEALING. No credit, \$78 (age 62, \$70.20).

For anyone who has lost a significant person through the breakup of a relationship, separation, divorce, or death, this is an educational and experiential exploration of the anatomy of grief and ways to enhance the healing process. Acquire new resources to work through the five major tasks of grief. Discover how to support yourself through your grief process, identify "unfinished business," integrate your loss, and reconstruct your life as you move out of grief into healing. Combines lectures, discussion, and exercises. Designed as an educational experience, not as a therapy group. (Limited to 25)

Winter Spec Term, ★Sec 1, Th, 6-8, Jan. 13-Feb.

10 (5 meetings), FordH 160. *No late fee through Jan. 6.*

(Beth Carlson, M.A., is an experienced therapist and a doctoral student in the Counseling and Student Personnel Psychology Program at the University of Minnesota)

PSch 0813 RISK TAKING FOR PERSONAL GROWTH. No credit, \$68 (age 62, \$61.20).

If you want to make changes in your life, your relationships, or your career, you have to take risks. Risk taking is necessary to make new friends or to enrich current relationships. This course is for those who feel they are missing out and life is passing them by, and includes taking stock of yourself as a risk taker, identifying the risks needed, overcoming risk-taking fears, assessing the benefits and consequences of the risk, taking smart risks, and building commitment and confidence. Learn how to please yourself instead of others. Designed as an educational experience, not as a therapy group. (Limited to 24)

Fall Spec Term, ★Sec 1, W, 6-8, Sept. 29-Oct. 20 (4 meetings), NCCE 229. *No late fee through Sept. 22.*

(Kevin J. Nutter, Ph.D., is the program director of the Career Resource Center at the University of Minnesota and president of the Minnesota Career Development Association)

PSch 0814 DEFINING A SELF: GENDER ISSUES IN ADULT DEVELOPMENT. No credit, \$85 (age 62, \$76.50).

Growth does not end with childhood and adolescence. Adults go through definite stages of development. Research in the social sciences suggests that women and men approach some developmental tasks in different ways. Learn how gender affects the development of a coherent sense of self, the formation of intimate relationships, and the definition of one's life work. Discuss gender differences and similarities in areas such as power, relationship style, and career and

family expectations. Combines lecture, discussion, and in-class exercises. Designed as an educational experience, not as a therapy group. (Limited to 25)
Fall Spec Term, ★Sec 1, T, 6-8, Oct. 5-Nov. 2 (5 meetings), FordH 130. *No late fee through Sept. 28.*

(Elisabeth A. Horst, Ph.D., has written on gender issues and intimacy development. She is a psychotherapist in private practice)

PSch 0815 IDENTITY AND INTIMACY IN CLOSE RELATIONSHIPS. No credit, \$51 (age 62, \$45.90).

Balance is what we strive for, to connect with someone else yet remain individual. Explore the dilemmas and choices in intimate relationships. People may behave as "attachers" (those who fear abandonment and being alone) or as "separators" (those who fear being trapped and smothered by others). At either extreme, individuals may have great difficulty in getting their needs met. An understanding of how these patterns develop and are acted out allows participants to examine their own behavior. This class is structured to help students recognize their attitudes about intimacy and suggests steps to take to achieve a more comfortable balance. Designed as an educational experience, not as a therapy group. (Limited to 30)

Winter Spec Term, ★Sec 1, Th, 6-8, Jan. 13-27 (3 meetings), FordH 175. *No late fee through Jan. 6.*

(Philip Colgan is the director of the Alcohol and Drug Counseling Education Program in the Department of Family Social Science at the University of Minnesota. He is also a psychotherapist in private practice in Minneapolis)

PSch 0816 MAKING WORK AND FAMILY WORK. No credit, \$64 (age 62, \$57.60).

Many of today's working families are fast becoming professional jugglers, constantly in the act of balancing multiple roles and obligations. Examine the growing connections between family life and the workplace with a focus on these challenges: identity confusion and role overload; changes in family structure, function, and values; work/family spillovers; and corporate policies. Learn a variety of helpful solutions for making work and family work including skills in parenting, communications, role sharing, time management, and family rituals. (Limited to 25)

Fall Spec Term, ★Sec 1, T, 6-8:30, Oct. 5-19 (3 meetings), VinH 211. *No late fee through Sept. 28.*

(James W. Sipe, Ph.D., is a father, family psychologist, and author. He and his spouse are partners in Renovex Corporation, a worksite health promotion company. He also has a psychotherapy practice in Minneapolis)

Noncredit Courses

PSch 0818 FIGHTING FAIR IN INTIMATE RELATIONSHIPS. No credit, \$68 (age 62, \$61.20).

Many people try to avoid arguments with spouses or partners. Yet family theory states that couples cannot achieve intimacy without first learning constructive ways to handle conflict. Conflict in close relationships does not have to get out of control or end with one person losing. Learn about strategies used by couples who disagree—even argue—in ways that actually improve the quality of their relationships. Combines lecture, discussion, and in-class exercises. Designed as an educational experience, not a therapy group. (Limited to 25)

Spring Spec Term, ★Sec 1, T, 6-8, Apr. 5-26 (4 meetings), FordH 170. *No late fee through Mar. 29.*

(Elisabeth A. Horst, Ph.D., has written on gender issues and intimacy development. She is a psycho-therapist in private practice)

PSch 0828 PATHS TO SUCCESS: A BALANCE BETWEEN SKILL AND INTUITION. No credit, \$68 (age 62, \$61.20).

Why are some individuals highly successful? What makes them so effective at work, in the community, and in their personal lives? For some people, success appears to be due to natural traits and fortuitous timing. For others, however, acquired skills and a centered outlook on life have brought them to the top. Discuss ideas presented in *The Seven Habits of Highly Effective People* by Stephen Covey and *The Path of the Everyday Hero* by Lorna Catford and Michael Ray. Discover your own inner resources and learn skills and outlooks to assist you in your path to success.

Fall Spec Term, Sec 1, W, 6-8, Sept. 29-Oct. 20 (4 meetings), FordH 175. *No late fee through Sept. 22.*

(Jane Marie Litwak is working on her Ph.D. in educational psychology. She is interested in the process of self-actualization and teaches a course in career development)

PSch 0829 CAREER DECISIONS: STRATEGIES FOR CHANGE. No credit, \$102 plus \$12 special fee. Total \$114 (age 62, \$91.80 plus \$12 special fee. Total \$103.80).

Take the first step toward assessing your job, your goals, and your self in relation to your career. Consider values, job satisfaction, job stress, and person-environment fit as key elements of the decision to stay where you are or to make a change. Explore educational training opportunities by learning ways to identify career alternatives. An opportunity to take the

Strong Interest Inventory and the Myers-Briggs Type Indicator, two vocational assessment inventories. (Limited to 30)

Fall Spec Term, ★Sec 1, T, 6-8, Oct. 5-Nov. 9 (6 meetings), NCCE 229, Krantz. *No late fee through Sept. 28.*

Winter Spec Term, ★Sec 2, W, 6-8, Jan. 12-Feb. 16 (6 meetings), NCCE 229, Huck. *No late fee through Jan. 5.*

Spring Spec Term, ★Sec 3, T, 6-8, Mar. 29-May 3 (6 meetings), NCCE 140, Pelto. *No late fee through Mar. 22.*

(Barbara Krantz is a licensed psychologist and career counselor for CEE Counseling at the University of Minnesota. She specializes in career, personal, and academic counseling with current and prospective students. Christina Huck, Ph.D. and licensed psychologist, is a career counselor who has worked with University students and other adults. She has taught career planning classes and job search workshops. Her doctoral dissertation focused on mid-life career change. Janet Pelto is a licensed psychologist and career counselor for CEE Counseling. She specializes in career, personal, and academic counseling with current and prospective students)

PSch 0830 CAREER UNREST AND MID-LIFE TRANSITIONS: REALIZING CHANGE. No credit, \$87 plus \$9 special fee. Total \$96 (age 62, \$78.30 plus \$9 special fee. Total \$87.30).

Designed for individuals experiencing career unrest and considering a mid-life career change. Explore the theoretical and practical sides of changing careers. Topics include theories of adult/career development; integration of work, family, and community life roles; a definition of "mid-life crisis"; and an examination of factors that contribute to this phenomenon. Covers a model for targeting career unrest and a framework for dealing with life transitions. Techniques used to heighten self-awareness include vocational testing, written exercises, and imagery. Includes lecture, discussion, and small-group interaction. (Limited to 24)

Spring Spec Term, ★Sec 1, W, 6-8, Apr. 6-May 4 (5 meetings), FordH 349. *No late fee through Mar. 30.*

(Kevin J. Nutter, Ph.D., is the program director of the Career Resource Center at the University of Minnesota and president of the Minnesota Career Development Association)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

PSch 0842 HANDLING DIFFICULT PEOPLE AND SITUATIONS. No credit, \$75 plus \$16.25 special fee. Total \$91.25 (age 62, \$67.50 plus \$16.25 special fee. Total \$83.75). *Includes lunch.*

Are you frustrated by the unnecessary stress and aggravation caused by troublesome people? Have you wished you could better respond to someone's negative behavior? Are you letting others destroy your self-esteem with their remarks and behavior? Examine contemporary communication/human relations problems and explore how to prevent or minimize personality conflicts when they occur. Learn how to deal with the "exploders," the "needlers," the "kill joys," the "clams," the "perfectionists," and other difficult personality styles. Resource materials provided. (Limited to 28)

Fall Spec Term, ★Sec 1, Sa, 9 a.m.-4, Oct. 2 (1 meeting), EBCEC 156, StP Campus. *No late fee through Sept. 24.*

(Marilyn Moen, M.A., is a consultant and trainer with over 20 years' experience in conducting workshops and seminars in communication skills, human relations, and personal productivity. She is owner and director of Moen Training and Consulting, Mound, Minnesota)

PSch 0843 "PEOPLE SMARTS": HOW TO FIGURE OUT, COMMUNICATE WITH, GET ALONG WITH, INFLUENCE, AND PERSUADE OTHERS. No credit, \$75 plus \$16.25 special fee. Total \$91.25 (age 62, \$67.50 plus \$16.25 special fee. Total \$83.75). *Includes lunch.*

Do you want to have fewer misunderstandings and conflicts with others? Do you wish that people really understood what you say? To be effective in life one needs to have excellent "people skills." Explore how to strengthen your relationships with others by studying how to get others to really listen to you. Discover the keys to motivation that work with many personality styles. Learn how to give and receive suggestions and criticism more effectively. Learn how to share bad news when you have to in a constructive manner. Focus on developing your own unique communication style capitalizing on your strengths. Resource materials included. (Limited to 28)

Spring Spec Term, ★Sec 1, Sa, 9 a.m.-4, Apr. 16 (1 meeting), EBCEC 156, StP Campus. *No late fee through Apr. 8.*

(See Marilyn Moen's biography in PSch 0842)

PSch 0845 YOU TALK MAN, I'LL TALK WOMAN: BRIDGING THE COMMUNICATION GAP. No credit, \$47 (age 62, \$42.30).

Research supports what men and women have known for centuries, that male and female communication styles often conflict with one another. Explore the nature and causes of this conflict, then address how the communication gap can be bridged through active listening, fair fighting, and related techniques. (Limited to 20)

Spring Spec Term, ★Sec 1, Th, 6-8, Apr. 7-21 (3 meetings), EddyH 102. *No late fee through Mar. 31.*

(Glenn Hirsch is a licensed consulting psychologist in private practice and a senior staff psychologist at University Counseling Services)

PSch 0851 CREATING EFFECTIVE PRESENTATIONS: THE PERFORMER'S PERSPECTIVE. No credit, \$51 (age 62, \$45.90)

Successful dancers, singers, and actors know how to project themselves as engaging performers. Put their techniques to use to create polished, dynamic speeches and presentations. Learn skills such as breath support and gestural use and then practice them to enhance your natural speaking style. Explore ways to develop greater self-confidence and personal satisfaction when giving presentations. Opportunities will be provided for personalized coaching as well as group instruction. (Limited to 20)

Fall Spec Term, ★Sec 1, T, 6-8, Oct. 5-19 (3 meetings), RarigC 610. *No late fee through Sept. 25.*

(Diane Aldis teaches communication skills in the Minneapolis Mediation Program. Also a teaching specialist in the Dance Program at the University of Minnesota, her performing experience ranges from experimental shows in New York City to repertory dance concerts in the Twin Cities)

PSch 0861 PARENTING: THE ACTIVE ALERT CHILD. No credit, \$54 (age 62, \$48.60).

For parents who feel as though they are always several steps behind their child. Active alert children are active (but not hyperactive), alert, bright, controlling, fearful, intense, attention-hungry, and empathetic. Examine how this child differs from the attention-deficit or hyperactive child and explore ways in which to best meet the needs of this child within the family system. (Limited to 30)

Fall Spec Term, ★Sec 1, Sa, 9 a.m.-12, Oct. 2, 9 (2 meetings), EBCEC 166, StP Campus. *No late fee through Sept. 24.*

(Linda Budd teaches in the Department of Family Social Science at the University of Minnesota. She is a licensed consulting psychologist in private practice and the author of Living With the Active Alert Child)

Noncredit Courses

PSch 0862 FINDING A COLLEGE THAT FITS: HELPING YOUR CHILD MAKE CHOICES. No credit, \$26 (age 62, \$23.40).

Do you find yourself perplexed by the almost bewildering array of college possibilities which your college-bound student faces? This course aims to give parents and guardians an understanding of the college admissions process, information on resources, some important inside tips, and the confidence to be an active participant in a vital part of your child's transition to adulthood. More specifically, information will be provided about what colleges look for in students; finding out about colleges; matching oneself to a college; applying for financial aid; and a college admissions planning calendar. Also, two representatives, one from a public and the other from a private institution, will discuss the advantages of attending their type of college. (Limited to 50)

Fall Spec Term, ★Sec 1, W, 6-9, Oct. 13 (1

meeting), NCEC 140. *No late fee through Oct. 6.* (Clifford J. Caine, Ph.D., is an author [How to Get Into College] and an educational consultant. He was previously director of mens' residence halls and the student union at Macalester College, and is currently director of student services and college counseling at Breck School)

Gardening, Finances, Wellness, Etc.

PSch 0903 FINANCIAL PLANNING FOR WOMEN. No credit, \$48 (age 62, \$43.20).

Designed specifically to help women make sound financial decisions. Learn to assess your financial situation and what you should consider in planning for the future. Address formulating objectives, appropriate investments based on income needs and net worth, insurance needs, tax status, and sources of income for retirement years. Demonstrations on how to evaluate and select investments and determine risks associated with various investment options. Using case studies and examples, examine specific issues of concern to divorced, widowed, separated, or single women. (Limited to 40)

Fall Spec Term, ★Sec 1, W, 6-8, Nov. 3-17 (3 meetings), Washburn Library, 5244 Lyndale Ave. South, Mpls. *No late fee through Oct. 27.*

(Jennifer Fogg, M.B.A., is a registered investment advisor with MTI Financial Services of Edina)

PSch 0906 INVESTMENTS AND PERSONAL FINANCIAL PLANNING—STAGE ONE. No credit, \$63 (age 62, \$56.70).

Sound financial planning for people age 40 and younger. Stage One emphasizes wealth accumulation, cash flow management, college funding, benefits utilization, and early retirement planning. *First Session: Basic Financial Management Process.* Taking your financial inventory, personal budgeting and planning, determining goals and objectives for investment, future expenditures and cash control procedures, savings, insurance, and wills. *Second Session: Basics of Investments.* Basic features and considerations of investing in liquid reserves, individual bonds and stocks, municipal bonds, and mutual funds. *Third Session: Putting It All Together.* Integrating your objectives with investment alternatives, basic tax considerations, and structuring an investment portfolio. (Limited to 40)

Winter Spec Term, ★Sec 1, T, 6-8:30, Feb. 8-22 (3 meetings), VinH 20. *No late fee through Feb. 1.* (See Jennifer Fogg's biography in PSch 0903)

PSch 0907 INVESTMENTS AND PERSONAL FINANCIAL PLANNING—STAGE TWO. No credit, \$63 (age 62, \$56.70).

Sound financial management for people age 40 and older. Stage Two emphasizes managing accumulated wealth and moving closer to retirement. *First Session: Basic Financial Management Process.* Taking your financial inventory, budgeting and planning, pre- and post-retirement, shifts in investment goals and objectives, future expenditures, insurance and estate management issues. *Second Session: Basics of Investments.* Basic features and considerations of investing in liquid reserves, individual bonds and stocks, municipal bonds, and mutual funds. *Third Session: Putting It All Together.* Integrating your objectives with investment alternatives, basic tax considerations, and structuring an investment portfolio which meets changing goals as you move toward and through retirement. (Limited to 40)

Winter Spec Term, ★Sec 1, Th, 6-8:30, Feb. 10-24 (3 meetings), VinH 20. *No late fee through Feb. 3.*

(See Jennifer Fogg's biography in PSch 0903)

PSch 0909 INVESTMENT ANALYSIS AND PORTFOLIO BUILDING. No credit, \$56 (age 62, \$50.40).

Once you understand what basic investments are available, how do you choose among them? Explore investment alternatives (stocks, bonds, cash, real estate), researching investments (publications, libraries, company sources), and assessing allocation of resources based on age, income, and life circumstances. Emphasis is on understanding stocks and mutual funds and investment vehicles, and working with financial professionals. Sample portfolios are used to demonstrate investment strategies. Students must have a basic working knowledge of various types of investments. (Limited to 40)

Spring Spec Term, ★Sec 1, W, 6-8, Apr. 6-20
(3 meetings), FordH 120. *No late fee through Mar. 30.*

(See Jennifer Fogg's biography in PSch 0903)

PSch 0912 PORTFOLIO MANAGEMENT AND ASSET ALLOCATION STRATEGIES. No credit, \$37 (age 62, \$33.30).

Designed for those with active investment experience. Begin with a review of market forecasting concepts for the stock market, interest rates, and inflation. Economic scenarios provide a basis for allocating assets among cash, stocks, bonds, and real estate. Techniques for managing a portfolio based on one's needs and objectives also are reviewed. (Limited to 40)

Spring Spec Term, ★Sec 1, W, 6-8, Apr. 27, May 4
(2 meetings), Walker Library, 2880 Hennepin Ave. South, Mpls. *No late fee through Apr. 20.*

(See Jennifer Fogg's biography in PSch 0903)

PSch 0920 EQUAL PARTNERSHIP: REAL AND PERSONAL PROPERTY RIGHTS IN RELATIONSHIPS. No credit, \$37 (age 62, \$33.30).

Marriage or cohabitation alters an individual's legal as well as financial situation. Understanding your legal rights and responsibilities in these partnerships may help you establish a happier, safer future for yourself and your family. Topics in this informational session include joint ownership of real estate and personal property; antenuptial (prenuptial) agreements; credit issues; establishment of financial assets in divorce or separation; rights to spouse/partner's pension and social security benefits; inheritance interests; and estate planning and challenges. Information covered also applies to unmarried couples living together. (Limited to 25)

Fall Spec Term, ★Sec 1, Sa, 9 a.m.-1:30, Oct. 2 (1 meeting), HHCtr 30. *No late fee through Sept. 24.*

(Donna L. Roback, a University of Minnesota Law School graduate, is an attorney in private practice specializing in the areas of employment, real estate, business, and family law)

PSch 0930 BUILDING A LEISURE IDENTITY: PERSONAL GROWTH THROUGH PLAY. No credit, \$24 (age 62, \$21.60).

Building a "career identity" is given a high priority by today's society. Developing a "leisure identity" is often ignored or given only minimal attention and energy. The irony is that leisure can provide many of the benefits and the fulfillment that we look for from our jobs. In this workshop, examine both societal and individual outlooks on leisure, find out what prevents you from fully enjoying your leisure, and explore appropriate activities which may provide opportunities for your emotional, physical, intellectual, spiritual, and social growth.

Spring Spec Term, Sec 1, Th, 6-9, Apr. 7
(1 meeting), FordH 120. *No late fee through Mar. 31.*

(Barb Krantz is a licensed psychologist at the University of Minnesota specializing in career counseling for adults. She has special interests and expertise in "leisure counseling," an outgrowth of career/personal counseling emphasizing the role of leisure in promoting life balance and enhancing personal growth)

PSch 0932 EXERCISE AND HEALTH FOR WOMEN. No credit, \$63 (age 62, \$56.70).

Is the health club scene just not right for you? Learn how to plan activity into your busy schedule and discover appropriate activities for your needs. Dispel some of the myths of exercise ("no pain, no gain," the dieting cycle, etc.) and develop motivational strategies to keep you on track. Discuss the implications of aging on an exercise program. A healthy, balanced approach to activity, nutrition, and well-being is encouraged. Each session consists of lecture/discussion as well as a nonthreatening activity component. (Limited to 25)

Fall Spec Term, ★Sec 1, W, 7-9, Oct. 6-27
(4 meetings), Gym 9, StP Campus. *No late fee through Sept. 29.*

(Fiona Holland has a master's degree in kinesiology from the University of Minnesota. She is a qualified physical education instructor with a special interest in health and wellness. She currently works at IsoSystems Inc., a health and weight management program)

Noncredit Courses

PSch 0933 WOMEN'S HEALTH ISSUES. No credit, \$63 (age 62, \$56.70).

Much of current medical knowledge comes from studies done on men. How does this affect the way women are treated by physicians and other health care professionals? Explore the special health needs of women. Learn how pregnancy, sexuality, and mental health are affected by body image. Study how work and poverty relate to women's health. Discover a wide range of women's health issues across the lifespan including cancer, weight, and why women live longer than men. Class includes lecture, discussion, selected readings, and the latest research from a variety of disciplines.

Spring Spec Term, Sec 1, T, 6-8, Apr. 5-26 (4 meetings), FordH 349. *No late fee through Mar. 29.*

(Deb Ringdahl is a certified nurse-midwife currently teaching in the graduate nurse-midwifery program in the School of Nursing at the University of Minnesota. She has a special interest in women's issues and their effect on women's health)

PSch 0934 FITNESS FOR THE ADVANCED EXERCISER: MAKING KNOWLEDGEABLE CHOICES. No credit, \$63 (age 62, \$56.70).

Learn the inside story of exercise training, the anatomical and physiological adaptations which occur in the individual that exercises regularly. Exercises covered include endurance (aerobic), power and strength (anaerobic), and combinations of both. Explore concepts such as oxygen consumption, lactate threshold, tempo training, target heart rate, plyometrics, and ergogenic aids. Review components of sports nutrition such as carbohydrate loading and replacement and fluid and mineral replacement and supplements. Contributions and limitations of exercise equipment will also be presented. (Limited to 25)

Spring Spec Term, ★Sec 1, W, 6-8, Apr. 6-27 (4 meetings), CookeH 214. *No late fee through Mar. 30.*

(Erik Ekstrom is a registered dietician and a Ph.D. candidate in exercise physiology at the University of Minnesota. He is active in cycling, running, and cross-country skiing. William Mendoza, M.D., is a Ph.D. candidate in the Department of Kinesiology. He is an active swimmer and cyclist)

PSch 0935 RACEWALKING: AN INTRODUCTION TO WELLNESS. No credit, \$52 (age 62, \$46.80).

Racewalking, a low-impact aerobic sport suitable for people of all ages, serves as an introduction to the concept of wellness. Learn the importance of physical activity by learning the skill of racewalking. Includes a variety of activities, such as stretching, specific racewalking exercises, interval training on the track, and discussions about shoes and clothing. Designed for people of all levels of expertise, from those who wish to learn this new activity to those who may want to train for competition. (Limited to 15)

Winter Spec Term, ★Sec 1, T, 6-8, Jan. 4-18 (3 meetings), CookeH 400. *No late fee through Dec. 28.*

(Mary Howell is an experienced kinesiology teacher as well as a coach and former member of the U.S. National Racewalking Team)

PSch 0936 NUTRITION, HEALTH, AND DISEASE: FACTS AND FANTASIES. No credit, \$75 (age 62, \$67.50).

The mass media is constantly bombarding the public with news about food and nutrition. Each week entire sections of the newspaper are devoted to food-related issues. Individuals may be confused about controversies among scientists over proper nutrition, and may not be sure what they should be eating. This course examines some of the current controversies related to food and health, and reviews key papers and experiments which contribute to the confusion. Topics include the history of food faddism; ethics as applied to nutrition research; processing of food; mood foods (hyperactivity, migraine headaches, criminal behavior, sleep and overeating); obesity and other eating disorders; diet and heart disease; diet and cancer; and diet and osteoporosis. Background in chemistry or biology is not required. (Limited to 30)

Winter Spec Term, ★Sec 1, M, 6:15-8:15, Jan. 10-Feb. 7 (4 meetings—no class Jan. 17), NCCE Library. *No late fee through Jan. 3.*

(Allen Levine is associate director of research at the Veterans Administration Medical Center and is a professor in the Department of Food, Science, and Nutrition and the Department of Medicine, Surgery, and Psychiatry at the University of Minnesota. In 1985 he received the Mead Johnson Award from the American Institute of Nutrition for his work on opioid regulation of food intake)

PSch 0937 STRESS—COPING AND HEALTH.

No credit, \$75 (age 62, \$67.50).

"I am stressed out." How many times have you uttered this phrase? What is stress? What can persons do to prevent it from having a negative impact on their lives and health? This course will provide you with information about theories of stress and what happens in your body when you experience high levels of stress. Most importantly, you will not only receive information about interventions to use to prevent or manage high levels of stress, but you will have opportunities to engage in a variety of interventions such as progressive muscle relaxation, Tai Chi, music, meditation, journal writing, and imagery. Learn how to develop a plan for managing stress in your life.

Winter Spec Term, Sec 1, T, 6-8, Jan. 4-25 (4 meetings), FolH 148. *No late fee through Dec. 28.*

(Mariah Snyder, Ph.D., is a professor of nursing at the University of Minnesota. In addition to considerable hands-on nursing experience, she has also conducted research on stress management interventions)

PSch 0938 RECLAIMING YOUR BODY: INTRODUCTION TO BODY WORK. No credit, \$83 (age 62, \$74.70).

Can you remember a time when your own movement felt as effortless and natural as a child's? For many, that freedom has been blocked by stress, chronic discomfort, or lack of energy. Learn ways to have a healthier relationship with your body and movement through experiential exercises, discussions, and guided movement explorations of body therapy techniques. Examine ways to change stressful movement habits in order to increase relaxation and physical well being and experience ease of movement. Briefly survey the body therapies and practitioners available locally. Includes discussions, demonstrations, and participation activities as well as optional readings. Suitable for all ages and physical abilities. (Limited to 20)

Fall Spec Term, ★Sec 1, T, 6-7:30, Oct. 5-Nov. 16 (7 meetings), RarigC 616. *No late fee through Sept. 28.*

(Barbara Loeb is a body/movement therapist trained in several different therapies and techniques. Also a dance instructor at the University of Minnesota, she has performed and choreographed on the east and west coasts and was an artist-in-residence at St. Olaf College for three years)

PSch 0940 WOOD IDENTIFICATION FOR THE HOBBYIST AND THE CRAFTSPERSON. No credit, \$58 (age 62, \$52.20).

Designed for the wood collector, the wood hobbyist, and the wood craftsman. Learn the basic structure of native woods, key factors in the identification of the major species, and identification techniques using knife and magnifying glasses. The structures of woods

are used to explain their physical properties and common uses in home construction and in making items such as musical instruments, cabinets, and furniture. (Limited to 30)

Fall Spec Term, ★Sec 1, Th, 6:30-8:30, Oct. 7-28 (4 meetings), KaufL 125, StP Campus. *No late fee through Sept. 30.*

(Dr. Robert Seavey is a research associate in the Department of Forest Products at the University of Minnesota and a consultant to Minnesota businesses. His research interests include wood-moisture relationships)

PSch 0950 LANDSCAPING THE MINNESOTA HOME GROUNDS. No credit, \$77 (age 62, \$69.30).

Plan a design to improve your yard or garden. Explore the artistic aspects of gardening and learn the best placement, staging, and use of plants in landscape design. Learn the role mood and balance play in landscape design and how to make small grounds have the effect of larger grounds. Establish pictorial effects in yards and grounds akin to the moods evoked by a painting. Plan a design to improve your yard or grounds. Includes a tour of a local garden. (Limited to 35)

Spring Spec Term, ★Sec 1, M, 6:30-8:30, Apr. 4-May 2 (5 meetings), HckrH 100, StP Campus. *No late fee through Mar. 28.*

(Glenn Ray is a consultant in horticultural arts with an emphasis on artistic aspects of gardening. He is a former director of the Minnesota Horticultural Society)

PSch 0951 GARDENING FROM THE GROUND UP: THE BASICS. No credit, \$92 (age 62 and Bell Museum members, \$82.80).

For novices or "brown" thumb gardeners who still have questions, this class provides the basics of planning, planting, and caring for ornamental plants. Includes the use of seed catalogs (terms used, pro's and con's of buying through the mail, seeds versus plants), planning home gardens (how to analyze the existing conditions of your own yard and organize the space), starting seeds and cuttings indoors, garden care (soil, preparation, watering, weeding, mulching), selecting plants from a nursery, planting techniques, and solving garden problems including pests and diseases. (Offered in cooperation with the Bell Museum of Natural History. Limited to 20)

Winter Spec Term, ★Sec 1, T, 6:15-8:15, Jan. 11-Feb. 15 (6 meetings), BellMus 3 (use Auditorium entrance facing Church Street). *No late fee through Jan. 4.*

(C. Colston Burrell is a landscape designer, consultant, writer, and photographer. He has an M.S. in horticulture and is currently a graduate student in landscape architecture)

Noncredit Courses

PSch 0952 FALL YARD CARE. No credit, \$32 (age 62, \$28.80).

Fall is an ideal time to improve your yard since many garden activities are well suited to cooler days. Learn what to do and why. Topics include basic information on tree and shrub planting (plant selection, planting techniques), herbaceous perennial transplanting (types and treatments), tender plant protection, turf care (seeding, herbicides, fertilizing), and yard-waste disposal (composting, mulching, off-site disposal). (Limited to 25)

Fall Spec Term, ★Sec 1, Th, 6:30-8:30, Sept. 23, 30 (2 meetings), NCCE 140. *No late fee through Sept. 16.*

(Jeffrey Johnson is a horticulturist at the Minnesota Landscape Arboretum with responsibility for maintaining the tree and shrub research nurseries. He is also a horticultural consultant, having studied and worked in the field for 14 years)

PSch 0953 PRUNING LANDSCAPE TREES AND SHRUBS. No credit, \$25 (age 62, \$22.50).

Trees and shrubs are an integral part of most landscape settings in the Upper Midwest, and pruning is necessary to maintain trees and shrubs in an attractive and healthy condition. Learn to maximize beauty, flower and fruit, form, longevity, and safety in your landscape. Understand basic plant growth and development as it pertains to maintenance pruning. Other topics include pruning terminology, deciduous and evergreen treatments, timing, proper cuts/techniques, renewal pruning, hedges, and equipment. (Limited to 25)

Winter Spec Term, ★Sec 1, W, 6:30-8, Feb. 23, Mar. 2 (2 meetings), NCCE 140. *No late fee through Feb. 16.*

(See Jeffrey Johnson's biography in PSch 0952)

PSch 0955 SELECTING THE BEST PLANTS FOR YOUR HOME AND GARDEN. No credit, \$34 (age 62 and Arboretum members, \$30.60).

Hundreds of varieties of woody landscape plants have been field tested at the University of Minnesota Landscape Arboretum since plantings began in 1958. Review the best performing trees and shrubs for this area based on these ongoing trials. The class plant list includes both deciduous and evergreen trees and shrubs. Mature size and form, fall color, and other ornamental traits are discussed. Cultural requirements and out-of-season characteristics such as bloom and winter silhouettes are illustrated in slide lectures. (Offered in cooperation with the Minnesota Land-

scape Arboretum. Admission fee to Arboretum waived with course registration receipt. Limited to 30)

Spring Spec Term, ★Sec 1, T, 6:30-8:30, May 10, 17 (2 meetings), Minnesota Landscape Arboretum, Learning Center, 3675 Arboretum Dr., Chanhassen. *No late fee through May 3.*

(Mike Zins is a horticulturist with the Minnesota Extension Service and has taught at the Arboretum for many years)

PSch 0956 YARD SMART: REDUCING YARD WASTES, MAINTENANCE, AND PLANT DISEASE. No credit, \$16 (age 62, \$14.40).

For the home gardener and landscaper, an introduction to landscaping and horticultural practices which can reduce yard waste and minimize labor through planning, plant selection, and planting methods. Explore common sense design concepts, watering, pruning, fertilizing practices which can help you avoid problems with plant disease and insects, and reusing and recycling yard wastes (composting: selecting site, building, maintaining, and using). (Limited to 30)

Spring Spec Term, ★Sec 1, M, 6:15-8:30, Apr. 18 (1 meeting), NCCE 229. *No late fee through Apr. 11.*

(Jack Porter is a landscape designer and consultant, and was formerly education coordinator for yard waste management, Minnesota Extension Service-Hennepin County)

PSch 0957 HOME GARDEN DESIGN: EXPLORING GARDEN TYPES AND GARDEN CULTURE. No credit, \$75 (age 62, \$67.50).

Explore home garden design by expanding the way you think about gardens, gaining an introduction to a wide array of garden types, and making three-dimensional models. Discover the origins of gardens as a physical expression of culture and as a way in which people relate to nature. Different garden types such as stroll gardens, kitchen gardens, hedge gardens, pattern gardens, and water gardens share some common characteristics regardless of era, culture, or location. Identify these common traits of different garden types and explore ways to apply these to your garden design. Develop ideas for your garden by constructing small models which experiment with the role of various landforms, plants, and structures in gardens. Students bring the common and inexpensive household materials used to build models. (Limited to 25)

Spring Spec Term, ★Sec 1, T, 6:15-8:15, Apr. 12-May 10 (5 meetings), Arch 40. *No late fee through Apr. 5.*

(Paul Damon is a lecturer and researcher in the Department of Landscape Architecture at the University of Minnesota. He has designed many gardens and projects in the Twin Cities area, and written about the history of landscape architecture and town planning)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

PSch 0958 DESIGNING GARDENS AND YARDS WITH THE ENVIRONMENT IN MIND. No credit, \$60 (age 62, \$54).

Your home is a small part of a much larger environmental framework; however, current practices of homebuilding and landscaping firms do not take into account the ecological function of your yard or its connection to the larger environment. Learn to design your home garden and yard as a living ecological entity, capable of having a measurable effect on storm water runoff, wildlife habitat, microclimatic conditions, and other environmental concerns. Explore how changing cultural ideals affect the appearance of American homes and gardens, and how the recent shift toward environmentalism is being reflected in the look of our residential areas. Discuss garden design in light of environmental values and issues. (Limited to 25)

Winter Spec Term, ★Sec 1, T, 6:15-8:15, Feb. 1-22 (4 meetings), Arch 15. *No late fee through Jan. 25.*

(See *Paul Damon's biography in PSch 0957*)

PSch 0965 FLORAL DESIGN: ARRANGING NATIVE PLANTS. No credit, \$60 plus \$15 course fee. Total \$75 (age 62, \$54 plus \$15 course fee. Total \$69).

Preserve some of the beauty and diversity of Minnesota's fall flora. Learn the potential uses of native plants for making dried floral arrangements. Examine the different plant communities in Minnesota and what plant materials could be useful from each community, the many ways that native materials can be preserved, and the basic principles and elements of design. Includes an off-campus Saturday field trip to collect plant materials (Oct. 9; participants provide own transportation and may choose to carpool). (Limited to 25)

Fall Spec Term, ★Sec 1, T, 6:30-8:30, Oct. 5-19 (3 meetings plus field trip), AlderH 423, StP campus. *No late fee through Sept. 28.*

(*Neil O. Anderson is a lecturer and post-doctoral research associate in the Department of Horticultural Science at the University of Minnesota. He has extensive training in floral design and serves as a consultant to the floral design industry*)

PSch 0980 SPANISH FOR TRAVELERS. No credit, \$100 (age 62, \$90).

A survival course for those with no previous knowledge of Spanish. It will provide you with the basic Spanish vocabulary necessary for coping with these everyday travel situations: changing money, obtaining train tickets and information, renting hotel rooms, shopping, ordering meals, asking directions, and un-

derstanding telephones, post offices, and public transportation systems. Increased knowledge of Spain, Latin America, and Hispanic culture will help you travel more adventurously and more economically. Emphasis will vary from area to area within the Hispanic world. (Limited to 25)

Spring Spec Term, ★Sec 1, T, 6-8, Mar. 29-May 3 (6 meetings), VinH 2. *No late fee through Mar. 22.*

(*Eric Narváez is an instructor at Normandale Community College. He holds an M.A. in foreign language education and Spanish, and has lived extensively in the Spanish-speaking world*)

PSch 0981 ITALIAN FOR TRAVELERS. No credit, \$100 (age 62, \$90).

A survival course for those with no previous knowledge of Italian. It will provide you with the basic Italian vocabulary necessary for coping with these everyday travel situations: changing money, obtaining train tickets and information, renting hotel rooms, shopping, ordering meals, asking directions, and understanding telephones, post offices, and public transportation systems. Increased knowledge of Italian and of Italian culture will help you travel more adventurously and more economically. (Limited to 25)

Fall Spec Term, ★Sec 1, W, 7-9, Sept. 29-Nov. 3 (6 meetings), FolH 50. *No late fee through Sept. 22*

(*Raffaella Anderson is a teaching specialist in the Department of French and Italian at the University of Minnesota*)

PSch 0982 FRENCH FOR TRAVELERS. No credit, \$100 (age 62, \$90).

A survival course for those with no previous knowledge of French. It will provide you with the basic French vocabulary necessary for coping with these everyday travel situations: changing money, obtaining train tickets and information, renting hotel rooms, shopping, ordering meals, asking directions, and understanding telephones, post offices, and public transportation systems. Increased knowledge of French and of French culture will help you travel more adventurously and more economically. (Limited to 25)

Winter Spec Term, ★Sec 1, W, 7-9, Jan. 5-Feb. 9 (6 meetings), SmithH 111. *No late fee through Dec. 29.*

(*Instructor, to be assigned, will be an advanced graduate student in the Department of French at the University of Minnesota*)

Noncredit Courses

PSch 0983 GERMAN FOR TRAVELERS. No credit, \$100 (age 62, \$90).

A survival course for those with no previous knowledge of German. It will provide you with the basic German vocabulary necessary for coping with these everyday travel situations: changing money, obtaining train tickets and information, renting hotel rooms, shopping, ordering meals, asking directions, and understanding telephones, post offices, and public transportation systems. Increased knowledge of German and of German culture will help you travel more adventurously and more economically. (Limited to 25)

Spring Spec Term, ★Sec 1, W, 7-9, Mar. 30-May 4 (6 meetings), VinH 6. *No late fee through Mar. 23.*

(Instructor, to be assigned, will be an advanced graduate student in the Department of German at the University of Minnesota)

Compleat Scholar Weekends

Spend uninterrupted time reading a book, discussing a challenging idea, or studying with an expert. Compleat Scholar Weekends (CSW) combine the pleasures of learning with a weekend away from it all. Each weekend is led by a University of Minnesota faculty member or expert, is limited in size to allow for small group conversations, and is held at a comfortable retreat center or lodge with recreational facilities to enjoy during your free time.

Registration Information

You may register for these weekends at any time before the stated deadline. Registrations are accepted on a first-come, first-served basis. Register in person or by mail in 206 Wesbrook Hall, 77 Pleasant Street S.E., Minneapolis, MN 55455; or call (612) 624-8880 for more information.

Registrations may be charged to Visa or MasterCard.

CSW 0700 SPRING WILDFLOWER WEEK-END. Apr. 30-May 1, 1994.

Spend a weekend searching for spring wildflowers in the lush woods and limestone bluffs of southeastern Minnesota. Floral dissection and use of a wildflower guidebook will be the most formal portion of the weekend. Rain or shine, explore the area of Lanesboro, including Beaver Creek Valley State Park, looking for harbingers of spring such as anemones, trillium, and blood root. Stay at Mrs. B's historic (circa 1890) bed and breakfast. Each room is furnished with traditional antiques and has its own bathroom. The weekend begins at 1 p.m. Saturday and concludes at 4 p.m. Sunday. There is a pre-trip lecture on Wednesday, Apr. 13, at 6 p.m. in Nolte Center Library. (Limited to 18)

Registration is now open; deadline for registration is Mar. 30.

★Spring Spec Term, Sec 1, no credit, \$166 price includes one night lodging (double occupancy), three meals, and a pre-trip lecture.

(Group leader is Roberta Sladky, former director of the University of Minnesota College of Biological Sciences greenhouse and currently the horticulture curator at the Minnesota Zoo. She is a wildflower enthusiast and an experienced group leader)

CSW 0702 WILDFLOWERS OF THE NORTH SHORE. June 17-19, 1994.

Enjoy the wildflowers of the boreal forest along Minnesota's North Shore. Look for twin flower, lady's slipper, bunchberry, and the many members of the blueberry family along woodland trails of Judge C. R. Magney State Park and the coastal rocks of Lake Superior. Accommodations are at the picturesque Naniboujou Lodge on the shore of Lake Superior north of Grand Marais. The weekend begins Friday evening and concludes at noon on Sunday. There is a pre-trip lecture on Tuesday, May 31, at 6 p.m. in Nolte Center Library. (Limited to 20)

Registration is now open; deadline for registration is May 17.

★Spring Spec Term, Sec 1, no credit, \$200 price includes two nights lodging (double occupancy), three meals, and a pre-trip lecture.

(Group leader is Roberta Sladky, former director of the University of Minnesota College of Biological Sciences greenhouse and currently the horticulture curator at the Minnesota Zoo. She is a wildflower enthusiast and an experienced group leader)

★ Indicates limited-enrollment section. See abbreviations and symbols, page 53.

CSW 0703 WINTER WILDLIFE. Feb. 18-20, 1994.

During this extended weekend participants will have an opportunity to enjoy the northern beauty of Itasca State Park by studying adaptations of plants and animals to the Minnesota winter climate. Activities will include two half-day nature hikes on snowshoes to look for examples of wildlife activity and to discuss their strategies for survival. Afternoons will be available for personal interests such as cross-country skiing or to carry out optional mini-experiments suggested by the instructor. The weekend begins Friday evening and concludes at noon on Sunday. The pre-trip meeting (Wednesday, Jan. 19, 6 p.m., St. Paul Student Center 202) will include an introductory lecture and time to plan transportation, food, and lodging arrangements at the Lake Itasca Forestry and Biological Station. (Limited to 25)

Registration is now open; deadline for registration is Jan. 17.

★Winter Spec Term, Sec 1, no credit, \$100 price includes two nights lodging (double occupancy) and a pre-trip lecture.

(Jake Miller has a Ph.D. from the Department of Ecology, Evolution, and Behavior at the University of Minnesota. He is a field biologist with an extensive teaching background and research experience focusing on bird behavior)

CSW 0801 MID-LIFE CAREER AUDIT: DECIDING WHAT TO DO WITH THE REST OF YOUR LIFE. Mar. 11-13, 1994.

Are you at that stage of life when you would like to explore new options? Are you thinking about changing career paths? This weekend seminar is designed to help you re-evaluate your adult interests, values, and personal characteristics and then apply this information to increased job satisfaction. Course includes a standardized assessment approach to help heighten self-knowledge and to develop an accurate picture of your work self. Complete an interest inventory, the Myers-Briggs Type Indicator, and other assessment tools. Interpret these inventories and apply this "new" knowledge to your own career development. Finally, develop an action plan for the next stage of your life. This weekend will be held at Wilder Forest, a meeting and retreat center on 980 acres of forest and lakes about an hour's drive from the Twin Cities. Lecture and discussion are interspersed with free time to enjoy recreational facilities or just to relax in the beautiful woodland setting. The weekend begins Friday evening and concludes Sunday at noon. There is a pre-trip lecture on Wednesday, Mar. 2, at 6 p.m. in Nolte Center Library. (Limited to 16)

Registration is now open; deadline for registration is Feb. 11.

★Winter Spec Term, Sec 1, no credit, \$210 price plus \$17 special fee. Total of \$227 includes two nights' lodging (double occupancy), four meals, and a pre-trip lecture.

(Kevin Nutter, Ph.D., is the program director of the Career Resource Center at the University of Minnesota. Alisa Eland, associate counselor in the Office of International Education, has an M.A. in counseling and student personnel psychology. She has extensive experience in career counseling)

CSW 0802 SOME WOMEN ARE BORN LEADERS: A CONVERSATION. Oct. 29-31, 1993.

The latest books on leadership agree that the most effective leadership style is collaborative, ethical, caring, empowering, inclusive, and . . . doesn't this sound like the leadership style women have been using forever? In their fascinating study of corporate change, John Naisbett and Patricia Aburdene conclude that successful organizations in the future will be those that aggressively hire, train, and promote women. In their words, "women can transform the workplace by expressing, not by giving up, their personal values." Join in a weekend (and one follow-up session) with kindred spirits to discuss current readings about the leadership strategies successful, empowering, ethical women use. Read selections from *Women of Influence*, *Women of Vision* (Astin and Leland), *Composing a Life* (Bateson), and *In Search of Our Mother's Gardens* (Walker). There will also be time to think about your own leadership style whether your experience is as a volunteer or in nonprofit or corporate management. This weekend will be held at Wilder Forest, a meeting and retreat center on 980 acres of forest and lakes about an hour's drive from the Twin Cities. Lecture and discussion are interspersed with free time to enjoy recreational facilities or just to relax in the beautiful woodland setting. This weekend begins Friday evening and concludes Sunday at noon. There is a pre-trip lecture on Tuesday, Oct. 12, at 6 p.m. in Nolte Center Library. There is a post-trip lecture on Wednesday, Dec. 8, at 6 p.m. in Nolte Center Library. (Limited to 16)

Registration is now open; deadline for registration is Sept. 29.

★Fall Spec Term, Sec 1, no credit, \$200 price includes two nights lodging (double occupancy), four meals, and pre- and post-trip lectures.

(Peg Lonquist is a doctoral student at the University of Minnesota studying visionary leadership and organizational and social change. She has over eight years of administrative experience in higher education and nonprofit organizations)

CSW 0803 PHYSICS AND THE MEANING OF LIFE. Apr. 29-May 1, 1994.

Physics is usually viewed as a science that provides an objective and quantitative description of the material world and its laws. But modern cosmology, relativity, and quantum theory inevitably raise questions that have much more than purely scientific significance: Where do matter and the universe and even we ourselves come from? Is there any meaning or purpose or rationale in the natural world? Are science and religion ultimately in conflict? What are the basic assumptions of science and where do they come from? How has scientific thought changed and evolved over the ages? This weekend workshop will cast physics in a new role—that of interpreter of life and its meaning. Through a combination of lectures and discussions, we shall try to reach a new understanding of the philosophical, humanistic, and spiritual implications of modern physics, and we shall explore the cosmic questions that seem forever beyond our grasp and yet which are the most meaningful and profound questions we can ask. This weekend will be held at Wilder Forest, a meeting and retreat center on 980 acres of forest and lakes about an hour's drive from the Twin Cities. Lecture and discussion are interspersed with free time to enjoy recreational facilities or just to relax in the beautiful woodland setting. This weekend begins Friday evening and concludes Sunday at noon. There is a pre-trip lecture on Wednesday, Apr. 20, at 6 p.m. in Nolte Center Library. (Limited to 16)

Registration is now open; deadline for registration is Mar. 29.

★Spring Spec Term, Sec 1, no credit, \$210 price includes two nights lodging (double occupancy), four meals, and a pre-trip lecture.

(Roger S. Jones is a physicist, writer, and associate professor at the University of Minnesota. His books include Physics as a Metaphor and Physics for the Rest of Us, and he lectures widely on science, art, and spirituality)

Research Explorations (REX)

What is the Research Explorations Program?

Research Explorations (REX) offers the opportunity for public participation in field and laboratory research projects of University of Minnesota faculty.

Research projects for 1993-94 have been scheduled throughout Minnesota as well as at other U.S. and international sites. Local projects deal with the environment, natural resources, wildlife and resource management, social and health issues, and other topics. One REX archaeological project takes place in Germany.

REX participants share in the workload of the research team's day. Under the guidance of the project leader and staff, REX volunteers may be asked to hike, boat, climb, dig, or engage in other physical activities. Volunteers also may assist in data collection, observation, photography, sampling, questionnaires, interviews, and coding.

Volunteers enjoy experiential learning while advancing important research and expanding intellectual horizons.

Application Process

Volunteers apply for a project of choice. Applications are screened, and the project leader has final approval. **Persons interested in participating in the REX program should call (612) 624-5092 for registration materials and complete information, as well as for the application form.**

Many REX projects can accommodate only a limited enrollment.

Qualifications for REX Participation

The most important qualifications required of REX participants are commitment, common sense, and adaptability to different situations and cultures.

Many projects require general skills, such as observing, interviewing, and record keeping. Especially for field projects, camping or wilderness experience is also beneficial. Some projects do need more specific skills, such as training in electronics, computers, or photography.

The Contribution

REX volunteers contribute their share of the cost of participating in the project and are responsible for travel expenses. **Because REX participants are contributing money and time to research sponsored by the University of Minnesota, a tax-exempt organization, the amount of your contribution may qualify as a tax-deductible contribution.**

The contribution covers such costs as field and laboratory expenses, compilation of research findings, and program planning, implementation, and administration. Projects have different arrangements regarding accommodations, meals, ground transportation, and clothing and equipment needs, so cost coverage varies.

Volunteer contributions do not cover airfare, costs to and from the assembly site, visas, passports, inoculations, medical or other emergencies, or other personal expenses.

Cancellation and Refunds

Payment of the required initial \$150 deposit is nonrefundable unless the University REX program cancels the research project or the applicant is not accepted as a project participant. The balance of the participant contribution will not be returned if the volunteer withdraws within 30 days prior to the project starting date (unless a replacement can be found). The research project depends on the financial contribution of the participant for advance costs. No returns or replacements can be made once the laboratory or field project has begun.

Orientation

Prior to participation, volunteers receive necessary information regarding project objectives, site conditions, laboratory and field activities and techniques, clothing and equipment needs, and health and entry requirements (for international projects). Direction and learning continue at the research site.

Project Expectations

The project leader is responsible for the involvement of the volunteer in the laboratory/field work of the research project. The project leader and REX staff reserve the right to end participation of any volunteer and require that the person leave the research site if he or she is unwilling to do the work, is unadaptable to the field conditions or to the research team, or does not adhere to University of Minnesota regulations and policies.

In some countries, the research team's presence requires governmental approval. Thus, it is crucial to respect the customs and laws of the host country. Though advance planning is always conducted, sometimes unforeseen situations do arise. Understanding, adaptability, and cooperation are therefore essential for all research participants.

Academic Credit

Academic credit is available for participating in most REX projects. Those interested in earning credit should contact the REX director and the specific project leader regarding requirements. The amount paid toward receiving academic credits may **not** be deducted as a charitable donation.

REX Projects for 1993-94

REX 0107 STUDY OF TURF GRASS FERTILIZER PATTERNS ON HOME LAWNS. *Dates:* to be arranged. *Contribution:* \$150.

This research project is designed to determine rates of fertilizer applications on home lawns in selected Twin Cities suburbs. Volunteers will perform laboratory analysis, field sampling, and statistical data entry as they work both independently and with the research staff. Training will be provided; computer skills helpful but not required. Academic credit may be available through directed study. Project leaders are Terry Cooper, associate professor, and John Schultz, teaching assistant, Department of Soil Science. Location: St. Paul campus. *Call 624-5092 for registration information and an application form.*

REX 0112 MANAGEMENT AND GENETIC PRACTICES WHICH INFLUENCE SHEEP PRODUCTION. *Dates:* to be arranged. *Contribution:* \$150.

The objective of this project is to provide the student with the hands-on learning experience of working with sheep as an animal model. Activities include birthing, identification, shearing, feeding, record evaluation, and experimental data collection. REX volunteers will gain first-hand experience in raising sheep and the opportunity of conducting their own research project relating to feeding, reproduction, and genetic engineering. Required participant qualifications: a willingness to learn, keen observation skills, ability to work with peers, and a love for animals and their welfare. Project leader is Charles Christians, professor, Department of Animal Science. Location: Beef Barn, St. Paul campus. *Call 624-5092 for registration information and an application form.*

Noncredit Courses

REX 0119 NEUROBIOLOGY OF PAIN AND OPIATES. *Dates:* to be arranged. *Contribution:* \$150.

In order to develop new approaches toward developing analgesic agents without addictive properties, this research project employs a variety of techniques to determine the chemistry, anatomy, and pharmacology of pain transmission. REX volunteers will work both with a team member and independently as they monitor the analgesic activity of various compounds in laboratory animals. General knowledge of biology and/or biochemistry and a desire to work with lab animals that are clean and friendly required. Project leader is Alice A. Larson, professor, Department of Veterinary Pathobiology. Location: Animal Science/Veterinary Medicine Building 217, St. Paul campus. Call 624-5092 for registration information and an application form.

REX 0121 IMPACT OF AGRICULTURAL CHEMICALS ON GROUNDWATER. *Dates:* to be arranged; daily work for two to three weeks. *Contribution:* \$150.

Developed in conjunction with the President's Initiative on Water Quality, this ongoing project is part of a large national program. Working with the project's leader and associate scientist, REX volunteers will take water and soil samples from one or more of the project's four major sites (one in Westport in Pope County; one near Princeton in Sherburne County; one just east of Rochester; and a fourth in Waseca). They will then assist in the analysis of collected samples. Analysis based on this research has already affected public policy on agriculture and the environment. Volunteers will also participate in other group activities, including discussion of pertinent environmental issues. Project leader is J. L. Anderson, professor, Department of Soil Science. Location: Pesticide Analytical Lab, St. Paul campus, and various field locations. Call 624-5092 for registration information and an application form.

REX 0123 THE INFLUENCE OF NEUROTENSIN ON GASTRIC FUNCTION. *Dates:* to be arranged. *Contribution:* \$150.

Using standard surgical procedures, a gastric cannula and a strain gauge transducer will be implanted in domestic turkeys. After the turkeys recover, neurotensin is infused, gastric secretions collected, and gastric motility monitored to determine the effects of neurotensin on gastric function. REX volunteers will assist in surgery, care for turkeys, and perform experiments. As a result of participating in the project, volunteers will gain an understanding of experimental design, surgical procedures, gastric physiology, and neurotensin functions. Required participant qualifications: organizational ability, dexterity, and willingness to work. Project leader is Gary Duke, professor, Department of Veterinary

Pathobiology. Location: Animal Science/Veterinary Medicine Building, St. Paul campus. Call 624-5092 for registration information and an application form.

REX 0129 ISOLATION AND PURIFICATION OF CHICKEN ANTIBODIES. *Dates:* to be arranged. *Contribution:* \$150.

Working with the project leader and other researchers, REX volunteers in this project will assist in isolating tubulin antibodies from chicken eggs and partially purifying them so that they can be used in studies of how plants use different forms of tubulin during development. The goal is to get the chicken antibodies into a form that is useful for microscopy and biochemical assays. Volunteers will precipitate and affinity-purify antibody proteins from egg yolks using routine procedures established in the lab. Knowledge of elementary chemistry required. Project leader is Sue Wick, associate professor, Department of Plant Biology. Location: St. Paul campus. Call 624-5092 for registration information and an application form.

REX 0130 STRESS EFFECTS ON LIVING PLANT CELLS. *Dates:* to be arranged. *Contribution:* \$150.

A study of varietal differences in plant cell membrane qualities based on resistance to water and salt stress. Seedlings exposed to these stresses will be evaluated through the light microscope. Some laboratory and microscopy experience would be helpful skills for a research volunteer. Limited to two volunteers. Project leader is Eduard Stadelmann, professor, Department of Horticultural Science. Location: Alderman Hall 228, St. Paul campus. Call 624-5092 for registration information and an application form.

REX 0136 MOVEMENT OF PESTICIDES TO GROUNDWATER. *Dates:* to be arranged. *Contribution:* \$150.

There is an on-going multiple-investigation study of the movement of agricultural chemicals (pesticides and nutrients) to groundwater in response to farming practices. Using research from that study, this REX project focuses on the movement and behavior of pesticides to understand their long-term environmental impact. The emphasis is on sampling, analysis, and interpretation of field samples. The REX volunteer will participate in collection of water samples for pesticide analysis, preparation of samples for analysis, final instrumental analysis of samples, and data evaluation. The volunteer should have some knowledge and experience in a chemistry laboratory and an interest in environmental sciences. Project leader is Paul D. Capel, assistant professor, Department of Civil and Mineral Engineering. Location: Gray Freshwater Biological Institute, Navarre, Minn. Call 624-5092 for registration information and an application form.

REX 0138 EFFECT OF DIETARY PROTEIN (LYSINE) INTAKE ON MAMMARY DEVELOPMENT, MILK PRODUCTION, AND SUBSEQUENT REPRODUCTION IN GILTS.

Dates: to be arranged. *Contribution:* \$150.

The purpose of this project is to determine the effect of Lysine intake during pregnancy or mammary development, and to determine the interacting effects of protein levels during pregnancy and lactation on milk production and subsequent reproduction of sows. REX volunteers will be involved in feeding animals, taking blood samples, and dissecting mammary tissue. Participants must be willing to participate in animal research. Project leader is J.E. Pettigrew, professor, Department of Animal Science. Location: St. Paul campus. *Call 624-5092 for registration information and an application form.*

REX 0139 PAPER RECYCLING TECHNOLOGY.

Dates: to be arranged. *Contribution:* \$150.

In the Department of Forest Products, there is an ongoing research program on the physical changes in paper properties caused by paper recycling and development of technology to reduce the adverse effects of recycling on paper quality. Responsibilities of REX volunteers in this research include sample collection, laboratory testing, and data analysis. Some lab and/or computer experience would be helpful. Project leader is Hank Wells, associate professor, Department of Forest Products. Location: St. Paul campus. *Call 624-5092 for registration information and an application form.*

REX 0142 EVALUATING GRAPES FOR GROWING IN MINNESOTA.

Dates: to be arranged. *Contribution:* \$150.

Working with members of the research team, REX volunteers will participate in this project to learn about the feasibility and difficulties of growing grapes in a cold climate. Activities include planting, pruning, and training grapevines; harvesting fruit, winemaking, collecting data on vine performance for disease resistance and fruit quality; and assisting with hybridization. The project includes both grape breeding and viticulture trials pertinent to developing grapes as a crop for cold climates. Required participant qualification: willingness to work outdoors under most conditions. Project leader is James Luby, associate professor, Department of Horticultural Science. Location: Horticultural Research Center, Excelsior, Minn. *Call 624-5092 for registration information and an application form.*

REX 0148 MICROBIAL PURIFICATION OF SOILS AND GROUNDWATER.

Dates: to be arranged. *Contribution:* \$150.

Some natural purification of pollutants in groundwater and soils can occur through microbial oxidation under certain conditions. In this project, the extent and rate of biodegradation of selected organic pollutants in water and in the presence of soil are measured, with the purpose of demonstrating sound clean-up procedures. The REX volunteer will set up and operate a series of manometric biochemical oxygen demand tests in existing apparatuses and then interpret and model data. Some understanding of chemistry is required. Project leader is Walter J. Maier, professor, Department of Civil and Mineral Engineering. Location: Minneapolis campus. *Call 624-5092 for registration information and an application form.*

REX 0161 CHARACTERIZATION OF GROWTH FACTOR(S) SECRETED BY A MACROPHAGE CELL LINE OF CHICKENS.

Dates: to be arranged. *Contribution:* \$150.

The primary goal of this project is to purify and characterize the factors secreted by a macrophage cell line. Preliminary observations suggest that a factor released by this cell line stimulates the DNA replication of a transformed T-cell line. Since this is a transformed cell line, the factor may be important in the maintenance and growth of this line. The REX volunteer will grow and maintain cell cultures, prepare batches of cell culture supernatant fluid, assay for biological activity using cell proliferation assay, and purify protein from cell culture fluids. A basic understanding of animal biology or microbiology is required; some lab experience would be helpful. Project leader is J. M. Sharma, professor, Department of Veterinary Medicine. Location: St. Paul campus. *Call 624-5092 for registration information and an application form.*

REX 0200 AN INTERPRETATIVE HISTORY OF DULUTH. *Dates:* to be arranged. *Contribution:* \$150.

This project is part of an ongoing effort at developing a book-length history of the city of Duluth with emphasis on the process of democratization by which the various immigrant communities in Duluth won a place in the economic, political, and cultural life of the city. The ultimate aim is to publish such a book; the project at present remains in the research phase. The current research work has received financial support from the Minnesota Historical Society and from the Center for Urban and Regional Affairs of the University of Minnesota. Supporting research has also been provided by a student in the Department of Philosophy working on a UROP grant from the University of Minnesota. REX volunteers will be involved in primary historical research, specifically on the histories of churches, fraternal societies, labor unions, and businesses that formed the institutional pillars of the various ethnic communities. There are also some foreign language newspapers yet to be studied, and also some key events such as the organization of political parties. The specific topic upon which a volunteer would work would be up to the volunteer. Good reading skills and respect for the truth are the only skills required. Project leader is Richard Hudelson, adjunct professor, Department of Philosophy. Location: Duluth libraries and other institutions. Call 624-5092 for registration information and an application form.

REX 0208 EXPERIMENTAL ARCHAEOLOGY: SMELT 1994. *Dates:* Apr.-June 1994; schedule to be arranged. *Contribution:* \$150.

This is the second in a series of experimental archaeology projects in which the methods and techniques of early, large-scale iron smelting are explored. Two replicas of Iron Age iron smelting furnaces will be constructed, tested, and fired in full production smelts to explore issues of product quality. Volunteers will be involved in furnace construction, operation, and maintenance; charge preparation; on-site instrument and physical analysis; and site interpretation and excavation. Working in constant association with research staff, volunteers will gain experience working on a full-scale multidisciplinary archaeology project. Required participant qualifications: ability to lift at least 30 pounds and comfortability working with fire or at certain heights. Experience with hot metals, blacksmithing, or bricklaying would be helpful, though not required. Academic credit may be available through directed study. Project leader is Carl Blair, post-doctoral fellow, Center for Ancient Studies. Location: St. Paul campus. Call 624-5092 for registration information and an application form.

REX 0234 MISSIONARIES AND THE CONQUEST OF HONDURAN INDIANS. *Dates:* to be arranged. *Contribution:* \$150.

Permanent mission stations, intended to "civilize" the Indians, were established in Honduras as early as 1545. Local and regional archives have produced a large collection of copies of 16th- and 17th-century documents relating to these Central American missions. Assistance is needed to transcribe and translate these Spanish documents about early colonial life of the Honduran Indians and the Mercedarian Order mission system. Fluency in Spanish is required. Academic credit may be available through directed study. Limited to one volunteer. Project leader is John Weeks, professor, Humanities/Social Sciences Libraries, and adjunct faculty, Department of Anthropology and the Latin American Studies Program. Location: Wilson Library 5, Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0241 CULTURAL DIVERSITY IN THE WORKPLACE. *Dates:* to be arranged. *Contribution:* \$150.

How are local and national organizations assessing their future needs with respect to cultural diversity? REX volunteers will assist in gathering pertinent information. Good communication and library research skills are required. Appreciation of cultural diversity, statistical data analysis skills, and familiarity with Macintosh word processing useful. Project leader is Rosita Albert, associate professor, Department of Speech-Communication. Location: various sites. Call 624-5092 for registration information and an application form.

REX 0243 NATIVE AMERICAN MYTH BUSTING IN AMERICAN HISTORY. *Dates:* to be arranged; flexible schedule. *Contribution:* \$150.

The goal of this project is to produce an article, and possibly a teachers manual, detailing specific facts, narratives of incidents, and outlines of discussions designed to counter commonly held assumptions about Native Americans. REX volunteers will do historical research to find the answers to specific questions provided by the project leader and cite sources of all information. Project leader is David L. Ghere, assistant professor, General College. Location: Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0244 GENDER ISSUES IN AGRICULTURAL AND DEVELOPMENT ECONOMICS.

Dates: to be arranged. *Contribution:* \$150. Analytical models used in agricultural and development economics research, planning, and project preparation, particularly in developing countries, do not, for the most part, take differences in gender roles into account. The goal of this project is to adapt the models to explicitly consider gender. REX volunteers would conduct a review of the literature, participate in small workshops, and write. Volunteers will gain exposure to a rapidly developing and recent field in economics—gender bias of neoclassical economic theory. Required participant qualifications: good literature review skills and excellent reading for content skills. Project leader is Delane Welsch, professor, Department of Agriculture and Applied Economics. Location: St. Paul campus. *Call 624-5092 for registration information and an application form.*

REX 0245 ATTITUDES TOWARD AND USES OF SEXUALLY EXPLICIT MATERIALS IN THE UNITED STATES, CZECHOSLOVAKIA, THE NETHERLANDS, AND THE UNITED KINGDOM.

Dates: to be arranged. *Contribution:* \$150. Researchers compare cross-cultural attitudes of (1) health and mental health professionals and (2) clients seeking help for sexual problems toward sexually explicit materials of various kinds. Therapeutic uses of such materials will also be explored. REX volunteers, working independently and with other members of the research team, will help design questionnaires; collect data; assist with data preparation, cleaning, and analysis; and help write scholarly articles for journals. Required participant qualifications: ability to pay attention to detail, willingness to help recruit potential subjects, and ability to work collaboratively with a research team. Project leader is Bean Robinson, psychologist, Program in Human Sexuality, and assistant professor, Department of Family Practice and Community Health. Location: Minneapolis. *Call 624-5092 for registration information and an application form.*

REX 0246 ASSESSMENT PROTOCOL FOR EVALUATION OF THE SEVERITY OF SEXUAL ABUSE.

Dates: to be arranged. *Contribution:* \$150. The goal of this project is the development of an assessment tool for mental health clinicians to use in evaluating clients with a history of sexual abuse. A literature search will be conducted to identify specific factors about abuse such as amount of physical force, harm, number of abuse incidents, duration of abuse,

type of abuse, number of perpetrators, etc. A REX volunteer is needed to help review the literature; design the clinical instrument; assist with data collection, preparation, and analysis; and assist with writing (final product will be a journal article). Required participant qualifications: attention to detail; good reading, comprehension, and analytical skills; and a willingness to help develop a project that is just beginning and not completely focused. Clinical experience would be helpful. Project leader is Bean Robinson, psychologist, Program in Human Sexuality, and assistant professor, Department of Family Practice and Community Health. Location: Minneapolis. *Call 624-5092 for registration information and an application form.*

REX 0250 COMPUTER SIMULATIONS OF NEW STATISTICAL ESTIMATORS IN ECONOMETRICS.

Dates: minimum commitment of two months; flexible schedule arranged. *Contribution:* \$150. Recently, many new statistical procedures have been developed in econometrics and their asymptotic properties are being investigated. While the theoretical results are useful, those results are confined to analyzing the properties of estimators when sample sizes grow large. Researchers would like to examine the properties of the estimators in a finite, small sample. A REX volunteer with FORTRAN programming experience (or high motivation) is being sought to provide computer programming for this project. Project leader is Hidehiko Ichimura, assistant professor, Department of Economics. Location: Minneapolis campus. *Call 624-5092 for registration information and an application form.*

REX 0260 IMPACT OF SEXUAL ABUSE TREATMENT ON FAMILY FUNCTIONING.

Dates: to be arranged. *Contribution:* \$150. Working with project staff, REX volunteers will accompany interviewers to meetings with family members at homes or agencies to evaluate the impact of child sexual abuse treatment on family functioning. This evaluation method has been implemented as a regular part of the evaluations of three clinical treatment programs in the Twin Cities. In addition to the interviews, volunteers will also participate in data management procedures. Required participant qualifications: interpersonal skills; basic computer skills would be very helpful (speed not an issue). Project leader is James W. Maddock, associate professor, Department of Family Social Science. Location: St. Paul campus, agencies, and family homes. *Call 624-5092 for registration information and an application form.*

REX 0261 RELATIONSHIPS IN ADOPTIVE FAMILIES. *Dates:* to be arranged. *Contribution:* \$150.

The purpose of this study is to examine variations in openness in adoptive family relationships and the consequences of contact between the adoptive and birth parents for the adopted child, the adoptive parents, and the birth mother. Data from over 190 adoptive families have been collected and interviews are being examined to address issues relating to self-concept and relationship development. In a team that works closely together, REX volunteers will participate in a variety of activities: coding of data from interviews with parents, children, or birth mothers; data entry; maintenance of a computerized data base bibliography; and data analysis. Required participant qualifications: interest in research, ability to work both independently and with small groups, willingness to participate in a variety of project roles. Project leader is Harold D. Grotevant, professor, Department of Family Social Science. Location: McNeal Hall, St. Paul campus. *Call 624-5092 for registration information and an application form.*

REX 0262 SPATIALLY COORDINATED BEHAVIOR. *Dates:* six-month commitment; schedule arranged. *Contribution:* \$150.

Working with a research group, REX volunteers can work on this project concerned with the guidance of spatial behavior, ranging from how visual information is used by infants and toddlers to guide locomotion to how adult professionals use topographic maps to find their way in outdoor environments. Volunteers will help design and carry out behavioral psychological experiments on spatial behavior. Weekly meetings will be held with the whole research group, including REX volunteers. The ability to work well with others—both with research subjects and other members of the research group—is required. Project leader is Herbert L. Pick, professor, Institute of Child Development. Location: Minneapolis campus and field settings. *Call 624-5092 for registration information and an application form.*

REX 0264 YOUNG CHILDREN'S USE OF FRAMES OF REFERENCE IN A SEARCH TASK. *Dates:* to be arranged. *Contribution:* \$150.

This project is focused on collecting and analyzing experimental data from human research participants (3-year-olds). Children are brought in by their parents and participate in one of several tasks; in all tasks the child is to figure out what the rule is by which small toys have been hidden. The REX volunteer will help in all phases of the research: contacting and scheduling appointments with parents, testing children, and

helping to analyze and interpret the resulting data in light of the extant research literature. The REX volunteer will gain practice in experimental design and implementation, from the conceptualization of a problem to the design of a means to test hypotheses about it to interpretation of the results. Some background in research methods and experience with young children are required. Project leader is Herbert L. Pick, professor, Institute of Child Development. Location: Institute of Child Development. *Call 624-5092 for registration information and an application form.*

REX 0265 COPING WITH CHRONIC ILLNESSES. *Dates:* to be arranged. *Contribution:* \$150.

The purpose of this project is to identify psychosocial predictors of psychological adjustment and treatment compliance among kidney transplant recipients, including coping strategies, control beliefs, and social support. Data are collected at 3, 6, and 12 months post-transplant via surveys and interviews. The impact of a chronic illness on care givers also is assessed. The REX volunteer would enter questionnaire data and interview patients and care givers in person and over the phone. Required participant qualifications: good interpersonal skills, interviewing skills, organizational skills. Project leader is Patricia Frazier, assistant professor, Department of Psychology. Location: Minneapolis campus. *Call 624-5092 for registration information and an application form.*

REX 0267 ELDER ROLE MODELS IN LONG-TERM CARE. *Dates:* to be arranged. *Contribution:* \$150.

Through analysis of intensive life-history interviews, this project seeks to understand the experience of successful aging, particularly among fragile elders. Analysis will be based on Erikson's theory of life-cycle development as revised by Erikson, Erikson, and Kivnick (1986). Goals of the project include identifying the range of useful models of successful aging and earlier-life forerunners of successful aging. REX volunteers would review interview transcripts with the project leader and research assistant and enter coded data into computers. Required participant qualification: computer literacy. Project leader is Helen Q. Kivnick, associate professor, School of Social Work. Location: Minneapolis campus and volunteer's home. *Call 624-5092 for registration information and an application form.*

REX 0301 NUTRITION AND ORAL HEALTH OF THE ELDERLY. *Dates:* to be arranged. *Contribution:* \$150.

Although nutrition in older adults is a known factor in overall health care, little attention has been given to oral health of the elderly. By interviewing nursing home residents and working with nurses, nutritionists, medical records, and other sources, researchers gather data to understand the connection between good nutrition and good oral health. This understanding will lead to educational programs and materials. Volunteers will assist in collecting, recording, and synthesizing data from interviews and lab tests. Limited to 6 volunteers. Project leader is Dr. Nelson Rhodus, research professor, Division of Oral Diagnosis and Radiology. Location: Moos Tower 7-536, Minneapolis Campus. *Call 624-5092 for registration information and an application form.*

REX 0302 BETTER HEALTH AT LOWER COST. *Dates:* to be arranged. *Contribution:* \$150.

This project attempts to improve the quality of life for frail elderly people and reduce their need for expensive care in hospitals and nursing homes. The research team hopes to achieve this goal by screening home-dwelling elders and then providing the most frail elders with intensive interdisciplinary care to address their major health-related problems. REX volunteers will contact community agencies to arrange services for the patients as well as providing information, counseling, and transportation within University hospital buildings. Some data management may be included. Required participant qualifications: good interpersonal and communication skills; computer literacy. Project leader is Chad Boulton, professor, Department of Family Practice and Community Health. Location: Minneapolis campus and medical offices. *Call 624-5092 for registration information and an application form.*

REX 0303 TEMPORAL AND SPATIAL EXPRESSION OF GROWTH FACTORS IN REGENERATION. *Dates:* to be arranged. *Contribution:* \$150.

This project seeks to identify cell dialogs/interactions leading to regeneration rather than scarring after injury. Experiments are conducted in vivo using a rat model. Tissue samples derived from control and treated animals are used to assess effects of experimental manipulations. Temporal and spatial distribution of growth factors used during regeneration will be evaluated by molecular (PCR) and histological (immunohistochemical/in situ hybrid) methods. Comparisons to data acquired during aborted regeneration and in culture will enable those growth factors important for regeneration to be identified. This will extend understanding of regeneration and regulation in de-

velopment. The REX researcher will participate in preparative activities (e.g., reagent preparation), assist in performing experiments and data collection, participate in data analysis, and attend lab meetings (at which ongoing research activities are discussed). Required participant qualifications: knowledge of basic aseptic (sterile) techniques, practical experience in preparing basic reagents (e.g., buffers), and familiarity with use of compound microscope. Project leader is Raymond E. Sicard, assistant professor, Department of Surgery. Location: Minneapolis campus. *Call 624-5092 for registration information and an application form.*

REX 0304 HEALTH AND REPRODUCTIVE HEALTH OF WOMEN IN AGRICULTURE. *Dates:* fall 1993; to be arranged. *Contribution:* \$150.

This project will survey the health and reproductive health status of women in agriculture with particular interest in the possible relationship between health problems and direct and/or indirect exposure to pesticides. The survey is designed to discover and describe lifestyles and activities that directly and indirectly expose women who are spouses of persons who apply pesticides. The REX volunteer will make site visits in rural Minnesota to interview study participants, verify questionnaire data, take photographs, and observe daily activities. The REX volunteer must have a genuine interest in and concern for persons who work in agriculture, and the ability to maintain neutrality in interviewing rural women regarding subjects of political and personal sensitivity. Project leader is Vincent F. Garry, associate professor, Department of Laboratory Medicine and Pathology. Location: various sites in Minnesota. *Call 624-5092 for registration information and an application form.*

REX 0305 NEURAL MECHANISMS OF HYPERALGESIA. *Dates:* to be arranged. *Contribution:* \$150.

This research team is currently studying the spinal neural mechanisms that contribute to nociception in rats. The goal of the present study is to determine whether excitatory amino acids (EAAs) or opiates can modulate hyperalgesia produced by intraplantar injection of capsaicin. The effects of intrathecal administration of EAA receptor antagonists and opiates on behavioral measures of hyperalgesia will be explored. The REX volunteer will perform surgery in rats (under supervision), do behavioral testing, and perform statistical analyses using computer programs. No specific skills are required, but some background in life sciences would be helpful. Project leader is Donald A. Simone, assistant professor, Department of Psychiatry. Location: Minneapolis campus. *Call 624-5092 for registration information and an application form.*

REX 0306 CEREBELLAR NEURONS: CALCIUM CHANNELS. *Dates:* to be arranged. *Contribution:* \$150.

The purpose of this project is to identify and characterize the calcium channels in the different types of cerebellar neurons. The responsibilities of the REX volunteer will depend upon interest and pre-existing knowledge, and could include such activities as staining and identifying neurons, patch-clamp recording from neurons, and computer analysis of electrical signals. A sound understanding of biology is required; experience with computers or electronics or histology would be helpful. Project leader is W. Raabe, associate professor, Department of Neurology. Location: VA Medical Center, Minneapolis. Call 624-5092 for registration information and an application form.

REX 0307 CELL INTERACTIONS IN THE INITIATION OF MAMMALIAN MUSCLE REGENERATION. *Dates:* to be arranged. *Contribution:* \$150.

A satellite cell is a precursor for muscle regeneration. In this project, regulation of satellite cell proliferation and differentiation will be explored in cell/tissue culture. Particular attention will be paid to the influences of wound fluids and interactions with fibroblasts and macrophages. The results of these studies will provide insight into how initial conditions following injury might predispose repair events to regeneration (with functional restoration) rather than scarring. The REX volunteer would participate in preparative activities (e.g., reagent preparation), assist in performing experiments and data collection, participate in data analysis, and attend lab meetings (at which ongoing research activities are discussed). Required participant qualifications: knowledge of basic aseptic (sterile) techniques, practical experience in preparing basic reagents (e.g., buffers), and familiarity with use of the compound microscope. Project leader is Raymond E. Sicard, assistant professor, Department of Surgery. Location: Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0308 EXPLORATION OF MECHANISMS OF ANALGESIA. *Dates:* to be arranged. *Contribution:* \$150.

When skin is inflamed, non-painful stimuli are perceived as painful. It has been determined that a receptor for a neurotransmitter released from sensory neurons is increased in the spinal cord of rats that have

an inflamed paw. The proposed project will determine whether drugs that block the receptor for this transmitter will block the rat's increased sensitivity to stimuli. The REX volunteer will conduct behavioral assays to study the analgesic effect of these drugs in laboratory rats; some training will be provided. Limited to one volunteer. Required participant qualifications: good observer, ability to keep detailed records, willingness to handle laboratory rats; must have achieved at least junior standing and completed introductory biology and chemistry courses. Project leader is Dr. Virginia Seybold, professor, Department of Cell Biology and Neuroanatomy. Location: Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0311 HORMONE-INDUCED DEVELOPMENTAL ABNORMALITIES. *Dates:* to be arranged. *Contribution:* \$150.

The purpose of the project is to evaluate the current status of research related to a hypothesis that developmental abnormalities induced by unusual estrogen/androgen levels in utero are a central factor in the etiology of homosexuality, and the feasibility of evaluating this hypothesis by measuring estrogen/androgen in stored amniocentesis samples. REX volunteers will conduct an exhaustive library evaluation and write the first draft of a review manuscript describing the results. Good writing skills are required. Project leader is W. Thomas Shier, professor, Department of Medicinal Chemistry. Location: Bio-Medical Library and other University libraries. Call 624-5092 for registration information and an application form.

REX 0312 PHASE PROPERTIES OF SKIN LIPIDS. *Dates:* to be arranged. *Contribution:* \$150.

The goal of this project is to characterize the phase properties of model lipids of the skin in order to understand cohesion and permeability. Activities would include isolation/synthesis of lipids and/or measurement and identification of the phases by optical and thermal analysis. Work of REX volunteers may involve biochemical isolations, chemical syntheses, or physical chemical measurements, depending on the interest of the volunteer. No specific skills required, but some chemistry background or familiarity with the laboratory would be helpful. Project leader is Timothy Wiedmann, assistant professor, Department of Pharmaceutics. Location: Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0315 DIET AND CANCER: HORMONAL AND DIETARY REGULATION OF METABOLISM IN HEALTH AND DISEASE. *Dates:* flexible schedule arranged. *Contribution:* \$150.

This project focuses on the effects of diet on normal cell growth and differentiation. The effects of diet components in changing normal cells to cancer cells is a central question in this research. Responding to this question requires work in more than one area. Investigators are involved in food science, microbiology, nutrition, molecular biology, and cell biology. REX volunteers can participate in a variety of activities, depending on skills and interest. These activities include cell culture maintenance, experiments to determine effects of fats and drugs on cells, and growing bacterial cultures. Required participant qualifications: high level of motivation; basic biology and chemistry. Project leader is Linda Brady, associate professor, Department of Food Science and Nutrition. Location: Andrew Boss Labs, St. Paul campus. *Call 624-5092 for registration information and an application form.*

REX 0323 PREDICTING DIABETES. *Dates:* to be arranged. *Contribution:* \$150.

Juvenile, or Type I, diabetes is a disease affecting children with multiple life-threatening problems for the rest of their lives. This work attempts to uncover latent damage in children which later would lead to overt and irreversible diabetes. Once prediabetic children have been identified, researchers hope (through new treatments becoming available) to reverse or stop this latent, ongoing damage and prevent the onset of diabetes. Volunteers will contact and interview families with diabetic and prediabetic children; they also will help tabulate and input data into the project's computer data base. Medical, nursing, or public health background preferred but not required; volunteers should possess effective communication skills. Limited to one volunteer. Project leader is Dr. Jose Barbosa, professor, Department of Internal Medicine. Location: Phillips-Wangensteen Building 6-150, Minneapolis campus. *Call 624-5092 for registration information and an application form.*

REX 0324 ALCOHOL AND DEGENERATIVE DISEASES. *Dates:* to be arranged. *Contribution:* \$150.

Alcohol consumption may have a role in the etiology and/or prognosis of various degenerative diseases such as coronary heart disease. The purpose of this study is to develop lab tests for quantification of long-term alcohol consumption. Research volunteers may be involved in lab work using computer software on protein analysis; they may also input crucial data into

a computer data bank. Some familiarity with basic laboratory procedures and equipment would be helpful. Limited to one volunteer. Project leader is Dr. Myron Gross, research associate, Division of Epidemiology. Location: Health Sciences Unit A, room 1-144, Minneapolis campus. *Call 624-5092 for registration information and an application form.*

REX 0333 QUALITY OF LIFE AFTER HEART SURGERY. *Dates:* to be arranged. *Contribution:* \$150.

This large five-site National Institutes of Health-funded study evaluates factors contributing to recovery and quality of life after heart surgery. Patients are interviewed before and after surgery, first at six weeks, then six months, and annually for five years. From this study, knowledge and understanding of the process of recovery from heart surgery will increase so that the care and quality of life of future patients may be improved. REX volunteers will do such things as conduct telephone interviews and record medical events and edit returned questionnaires. In-person subject contact is optional. Required participant qualification: good communication skills. Project leader is Ruth Lindquist, associate professor, School of Nursing. Location: Minneapolis campus and the Minneapolis Heart Institute. *Call 624-5092 for registration information and an application form.*

REX 0334 THE INFLUENCE OF ALUMINUM UPON EMBRYONIC BONE DEVELOPMENT. *Dates:* to be arranged. *Contribution:* \$150.

Elevated levels of aluminum have been associated with a serious bone disorder, osteomalacia. The mode of action of aluminum toxicity in the expression of osteomalacia is not well understood. This project will examine the influence of aluminum slats upon local versus systemic factors which are known to be important in embryonic bone development, using the chick embryo as the experimental model. REX volunteers will do animal culture and dissection, solution preparation, histochemical preparation of skeletal tissue for microscopic study, light photomicroscopy, basic statistical analysis of data, and possibly simple biochemical determinations. Completion of basic course work in inorganic and organic chemistry along with one to two years of course work in the biological sciences are required. Project leader is Conrad E. Firling, professor, Department of Biology, University of Minnesota, Duluth. Location: UMD. *Call 624-5092 for registration information and an application form.*

REX 0335 QUALITY ASSURANCE/PATIENT SAFETY MONITORING. *Dates:* to be arranged. *Contribution:* \$150.

This study seeks to assess and follow-up on a variety of surgical patient parameters (e.g., pulse oximetry, vitals, complications intra- and post-operatively) in order to improve quality of care and patient safety. Because REX volunteers will collect data and perform statistical analysis of quality assurance parameters, experience using statistics is required. Project leader is Shep Cohen, assistant professor, Department of Anesthesiology. Location: Minneapolis V.A. Medical Center. Call 624-5092 for registration information and an application form.

REX 0337 DETERMINATION OF INCOMPETENCY. *Dates:* to be arranged; six-month commitment preferred. *Contribution:* \$150.

This project seeks to determine the criteria and events surrounding decision making when an elderly person can no longer care for his or her person and possessions. Depending on the phase of the study and the skills of the volunteers, REX participants may extract data from court records, telephone guardians to explain the study, recruit volunteers from care-giver groups, enter data, write reports, or perform statistical analysis. Project leader is Mary Weinensee, assistant professor, School of Nursing. Location: Health Sciences Unit F, room 6-101, Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0342 IMPROVING PHYSICAL PERFORMANCE OF THE ELDERLY. *Dates:* minimum of four weeks, four to eight hours a day, three to five days a week; to be arranged. *Contribution:* \$150.

Promote the reality that one can live in control of one's life and daily activities as one advances in age. This University project assesses balance, physical performance, and cardiovascular stability of persons over age 65. REX volunteers will telephone contacts, conduct interviews, and assist with subject recruitment, maintenance, and laboratory assessment. Good communication skills are required; some background in physiology or physics would be helpful. Project leader is Ruth Lindquist, associate professor, School of Nursing. Location: Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0343 ISOLATION AND CHARACTERIZATION OF PANCREAS ENZYME. *Dates:* to be arranged. *Contribution:* \$150.

Both kidney and pancreas transaminidase activities are controlled by creatine in the diet and by growth hormone. The kidney enzyme, but not the pancreas enzyme, has been purified and characterized. Both purified enzymes are needed for investigations on the nature of the regulation of their activities by creatine and growth hormone. REX volunteers will help improve a procedure already developed by the researchers to isolate and characterize the pancreas enzyme. Some previous lab experience helpful but not necessary, as project leader will teach all necessary skills. Project leader is John F. Van Pilsom, professor emeritus, Department of Biochemistry. Location: Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0344 BIOMEDICAL RESEARCH ON DISEASES OF MUSCLE. *Dates:* minimum of five weeks, three to four hours a day, one to five days a week; to be arranged. *Contribution:* \$150.

Working closely with the project leader and research staff, join this research related to muscle diseases (myotonia and malignant hyperthermia) and muscle physiology. Participate in laboratory work, including preparation of solutions and electrodes, dissection of biopsy specimens (human and pig skeletal muscle), and data collection and analysis. REX volunteers must have patience, an open-minded attitude toward animal utilization for research, and an interest in science. Project leader is Paul Iaizzo, assistant professor, Department of Anesthesiology. Location: Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0346 RAPID DETECTION OF TUMOR CELLS IN MICROGRAPHIC SURGERY. *Dates:* to be arranged. *Contribution:* \$150.

Mohs micrographic surgery, a procedure used to remove skin cancer, relies on the examination of rapidly stained tissue sections for tumor-free margins. Squamous cell carcinoma often eludes conventional detection methods. REX volunteers will help devise a rapid antibody-based assay for the reliable detection of residual tumor. Actual work includes: cryostat sectioning of skin specimens, composing buffers, diluting antibodies, immunostaining tissue sections, and photomicrography. Required participant qualifications include basic college-level knowledge of chemistry and elementary biology as well as two quarters of lab or equivalent employment experience. Project leader is Christopher B. Zachary, assistant professor, Department of Dermatology. Location: Phillips-Wangensteen Building, Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0347 MEASUREMENT OF O₂ AND pH IN MUSCLE. *Dates:* to be arranged. *Contribution:* \$150.

Seeking to ultimately measure O₂ and pH in the muscle of humans suffering from chronic pain of muscular origin, researchers are first measuring these parameters in the muscles of rats with the use of microelectrodes. Initial experiments are designed to determine the reproducibility of these measurements. In addition, researchers want to know what interventions will alter O₂ and pH. Using microelectrodes, volunteers will measure levels of O₂ and pH in the muscles of anesthetized rats and work to develop innovative approaches to making these measurements. Participants are required to have a basic background in college biology and chemistry. Project leader is Keith C. Kajander, assistant professor, Department of Oral Sciences. Location: Moos Tower, Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0348 INFECTION AND IMMUNITY. *Dates:* to be arranged. *Contribution:* \$150.

This on-going research focuses on host defense against bacterial and viral infections. The overall goal of these projects is to understand on a molecular level those aspects of immunity that are important for recovery from specific infections. Also of interest is how alcohol, drugs of abuse, and stress suppress host defense mechanisms and increase susceptibility to infections. The REX volunteer will have a specific project in the area of host defense and infections determined by current studies in the laboratory and the volunteer's interests and goals. The project will be a manageable and important aspect of the studies described above. The work will include laboratory experiments with the project leaders and their graduate students, as well as analysis of results and current literature. Basic knowledge of biological sciences is needed. The volunteer should be a critical thinker and self-motivated. The specific project will be determined by the volunteer's background and skills. Project leaders are Martha A. Mellencamp and Thomas W. Molitor, associate professors, Department of Clinical and Population Sciences. Location: St. Paul campus. Call 624-5092 for registration information and an application form.

REX 0349 MECHANISMS OF NEURODEGENERATION IN ALZHEIMER'S DISEASE. *Dates:* to be arranged. *Contribution:* \$150.

In Alzheimer's disease there is significant loss of neurons. The mechanisms of this neurodegeneration are not clearly known, and knowledge of such mechanisms would help combat the progress of the disease. The aim of this project is to investigate the effects of excessive brain activation on neuronal survival and the cellular mediators involved. Inhibitors of certain biochemical pathways which have been implicated in neuronal death will be tested. REX volunteers will grow nerve cells in culture, treat them with substances, and quantitate survival. Volunteers will attend lab meetings and discuss background of the project and the results obtained with the project leader and research team. In this process, volunteers will be exposed to up-to-date knowledge in brain function and its malfunction in neurodegenerative diseases such as Alzheimer's disease. Required participant qualifications: background in biology and chemistry; ability to prepare solutions of certain concentrations. Computer graphics and spreadsheet skills would be helpful, but are not required. Academic credit may be available through directed study. Project leader is Esam El-Fakahany, associate professor, Department of Psychiatry. Location: Diehl Hall, Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0360 REGIONAL RURAL INJURY STUDY. *Dates:* minimum commitment of four weeks; to be arranged. *Contribution:* \$150.

Funded by the Centers for Disease Control, the primary purpose of this project is to identify the magnitude and potential risk factors of the injury problem in rural populations in a five-state region representative of the major types of agricultural production in the United States. The ultimate goal is to use the results to develop agricultural and other injury prevention and control programs in rural areas. REX volunteers will assist with the development of papers, including literature searches; work with co-investigators as they finalize analysis and do interpretation; assist in writing drafts; and become involved in a major regional workshop to disseminate information. Excellent organizational and writing skills and basic math skills are required. Project leader is Susan Gerberich, associate professor, Division of Environmental and Occupational Health. Location: Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0370 ATTENTION DEFICIT DISORDER: DISCOVERING NORMS FOR TESTING.

Dates: to be arranged; minimum commitment of three months preferred. *Contribution:* \$150. The T.O.V.A.TM is a 22-minute computer "game" that measures speed and accuracy of visual information processing. It has been shown to be valuable in assessing attention deficit disorders in children and adults. However, more extensive norms are needed. Using portable laptop computers provided by the research project, two REX volunteers can help move this project forward as they test children, teenagers, and/or adults. Volunteers must provide their own transportation and possess good interpersonal skills, but knowledge of computers is not necessary. Project leader is Lawrence M. Greenberg, professor, Department of Psychiatry. Location: subjects' homes or community organizations where they gather. Call 624-5092 for registration information and an application form.

REX 0407 HISTORICAL ATLAS OF THE ST. PAUL CENTRAL BUSINESS DISTRICT.

Dates: to be arranged. *Contribution:* \$150. Using Geographic Information System (GIS) technology, a series of maps showing the development of the central business district of St. Paul is being created. After learning basic GIS techniques, REX volunteers will acquire information from a variety of sources (e.g., Minnesota Historical Society, St. Paul Public Works Department) and, using one of the most advanced GIS packages available, add information to a computerized digital base map being developed for 1884. This map can then be manipulated to highlight different aspects of land use, infrastructure, and socioeconomic development. Participants must be able to work with systematic records; computer knowledge helpful but not required. Project leader is Roger Miller, associate professor, Department of Geography. Location: Minneapolis campus and city and state offices. Call 624-5092 for registration information and an application form.

REX 0433 1, 3-DIMETHYL-2-PHENYLBENZIMIDAZOLINE; AN NADH ANALOGUE?

Dates: to be arranged. *Contribution:* \$150.

The title compound will be prepared by known methods and tested as a reducing agent for a range of oxidizing agents (NAD⁺ analogues). When a suitable oxidizing agent is found, the rate and equilibrium constants will be measured for the hydride transfer. REX participants will do synthesis and characterization of the title compound and precursors, and, if time permits, oxidation reactions. Required participant

qualification: freshman chemistry, including some very elementary organic chemistry. Project leader is Maurice M. Kreevoy, professor, Department of Chemistry. Location: Kohloff Hall, Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0434 MECHANISTIC ORGANIC CHEMISTRY.

Dates: to be arranged. *Contribution:* \$150. Fundamental reactivity of charged species and learning about the relationship between their structure and reactivity is the focus of this project. This is reflected in mechanistic studies and the investigation of theoretically interesting compounds (e.g., antiaromatic ions). REX volunteers will make organic compounds and characterize them using modern spectroscopic tools. Required participant qualification: at least one year of college organic chemistry. Project leader is Steven Kass, associate professor, Department of Chemistry. Location: Kohloff Hall, Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0436 STARCH-BASED PLASTICS.

Dates: to be arranged. *Contribution:* \$150.

This project involves making useful plastics from agricultural sources such as starch or protein. The objectives are to process these materials and test for their properties. Activities for the REX volunteers will include operating such equipment as extruders or blenders and testing materials for their chemical and physical properties. Some understanding of chemistry is required. Project leader is Mrinal Bhattacharya, assistant professor, Department of Agricultural Engineering. Location: St. Paul campus. Call 624-5092 for registration information and an application form.

REX 0438 STRUCTURE AND PROTEIN ENGINEERING.

Dates: to be arranged. *Contribution:* \$150.

The Ohlendorf lab studies the structure of large molecules like DNA and proteins. The knowledge of these structures is used to design better proteins and drugs. Current research is on toxic shock protein, dioxygenases, DNA binding proteins, and other proteins imported in cystic fibrosis. There are projects involving biochemistry, molecular biology, and computers. The type of work assigned to REX volunteers will depend on the area selected by each volunteer. Work includes solving macromolecular structures, making nutrients, and designing proteins and drugs. Volunteers should have a basic understanding of chemistry and biology. Project leader is Douglas Ohlendorf, associate professor, Department of Biochemistry. Location: Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0440 BEHAVIOR OF HIGH-STRENGTH CONCRETE: MATERIALS RESEARCH.

Dates: to be arranged. *Contribution:* \$150.

The goals of this research are to understand material behavior and take advantage of highest attainable strengths in structural systems, and to better detail structures for earthquake resistance. Experimental research will be conducted in the lab to investigate these issues. REX volunteers will assist in the laboratory with tests. No specific background required, just an interest in the program. Project leader is Cathy French, associate professor, Department of Civil and Mineral Engineering. Location: Minneapolis campus. *Call 624-5092 for registration information and an application form.*

REX 0441 CAVITATION OR "BUBBLE, BUBBLE, TOIL AND TROUBLE." *Dates:* to be arranged. *Contribution:* \$150.

This is a research project on cavitation in tip vortex flow. The goal is to understand the mechanism of cavitation in a complex flow. Special instrumentation such as LDA and high speed photography are used relate the bubble dynamics to the structure of a tip vortex. The REX volunteer would assist in high speed photography, measuring the tensile strength of water (yes, tensile strength), LDA measurements, and data reduction. A strong background in physics and/or engineering is required; some knowledge of optics would be helpful. Project leader is Roger E. Arndt, professor, Department of Civil and Mineral Engineering. Location: St. Anthony Falls Hydraulic Lab, Minneapolis. *Call 624-5092 for registration information and an application form.*

REX 0442 THE IMPACT OF ROAD INFORMATION/INCIDENT ADVISORIES ON DRIVERS' ROUTE CHOICES. *Dates:* to be determined. *Contribution:* \$150.

Information on road delays and incidents/accidents affects drivers' route to work choices. This project seeks to quantify these effects so that we can find better ways to design traveler advisory messages on radio and television. REX volunteers will personally interview commuters at their place of work (e.g., the University), tabulate responses in computer files, and possibly analyze responses. Interviewing skills with an emphasis on personal interviews are required. Project leader is Yorgos Stephanedes, professor, Department of Civil and Mineral Engineering. Location: major work locations including the University of Minnesota. *Call 624-5092 for registration information and an application form.*

REX 0443 BEHAVIOR OF HIGH-STRENGTH PRESTRESSED BRIDGE GIRDERS. *Dates:* to be arranged. *Contribution:* \$150.

The goal of this research is to investigate the application of high-strength concrete to prestressed bridge girders. Two prestressed bridge girders are to be fabricated with high-strength concrete, which enables up to 30-percent increases in span lengths compared with conventionally fabricated girders. The girders will be instrumented to determine long-term prestress losses, deflections, fatigue behavior, and flexural and shear strengths. REX volunteers will assist with the tests and data reduction. The only required participant qualification is an interest in the program. Project leader is Cathy French, associate professor, Department of Civil and Mineral Engineering. Location: The tests will be conducted in a laboratory approximately five miles from the University of Minnesota Twin Cities campus. *Call 624-5092 for registration information and an application form.*

REX 0444 PRECAST CONCRETE MEMBERS SUBJECTED TO EARTHQUAKE LOADING. *Dates:* to be arranged. *Contribution:* \$150.

Precast structures are constructed using individual beam and column elements that have been prefabricated in a plant. This construction method offers superior quality control over cast-in-place concrete. In addition, it is possible to reduce the structural erection time. In seismic regions, structures are subjected to large lateral loads. Consequently, the design and detailing of connections which tie the individual beam and column elements together become critical. A research program is currently underway to investigate the behavior of several types of connections between precast elements subjected to simulated earthquake loading. The experimental research will be conducted in the Civil and Mineral Engineering Structural Lab. REX volunteers will assist in the laboratory with tests. The only required participant qualification is an interest in the program. Project leader is Cathy French, associate professor, Department of Civil and Mineral Engineering. Location: Minneapolis campus, University of Minnesota. *Call 624-5092 for registration information and an application form.*

REX 0451 COMPUTER SIMULATIONS OF SOLIDS AND LIQUIDS. *Dates:* to be arranged. *Contribution:* \$150.

Computers are used to describe solids and liquids at the atomic level. Vivid images of the motion of atoms can be obtained. Results provide new research insights into properties of solids and liquids and are also good teaching tools. Programs are adaptable to microcomputers. REX volunteers will run developed codes on supercomputers and develop new codes as abilities and time allow. They will gain knowledge about solid and fluid state physics and the use of supercomputers. Required participant qualifications: first-year college calculus-based physics; some knowledge of FORTRAN computer language. Project leader is J. W. Halley, professor, Department of Physics. Location: Physics Building, Minneapolis campus. *Call 624-5092 for registration information and an application form.*

REX 0470 PHOTOREFLECTANCE STUDIES OF COPLANAR STRUCTURES ON SEMICONDUCTOR SUBSTRATES. *Dates:* to be arranged. *Contribution:* \$150.

Photoreflectance (PR) is widely used as a tool to probe the electric fields at the surfaces and interfaces of semiconductors. The advantages of using PR is that it is contactless and can be done at room temperature. In PR the reflectance of a sample (in this case a semiconductor material, gallium arsenide) is modulated by a laser beam; the change in the reflectance of the sample is then detected by a photodetector when it is probed by another beam of variable wavelength at a weaker intensity. By analyzing the change in the reflectance from the sample, information about the strength of the electric field can be determined. This project is to develop PR as a tool to measure the electric field profile of the semiconductor substrates such as GaAs. The field profile is important for the following reasons: it affects the performance and speed of the device fabricated from the material, and it determines the speed of propagation of signals travelling on transmission lines (such as microstrip lines or coplanar waveguides) fabricated on these substrates. The REX volunteer will be involved in running the experiments or setting up the experiments for measurement. The volunteer can also improve the instrumentation. Required participant qualifications: a willingness to learn, some experience with computers, and an interest in physics or physical chemistry. Project leader is Philip Cheung, assistant professor, Department of Computer Engineering, University of Minnesota, Duluth. Location: UMD. *Call 624-5092 for registration information and an application form.*

REX 0603 EDUCATORS WHO HAVE DISABILITIES. *Dates:* to be arranged. *Contribution:* \$150.

The purpose of this project is to examine the lives of persons with disabilities who are, or are training to become, educators. Volunteers will interview disabled preservice and licensed teachers to learn about their career choice, the factors that have helped or hindered their training and employment, and adaptations they have used to function as educators. Volunteers will also prepare interview transcripts and analyze interview data. Volunteers need strong interpersonal skills and adequate typing skills. Experience with persons with disabilities and familiarity with Macintosh computers helpful but not necessary. Project leaders are Clayton Keller and Joan Karp, assistant professors, Department of Child and Family Development, University of Minnesota, Duluth. Location: Montague Hall 120, UMD. Arrangements to conduct this research outside of the Duluth area can be made. *Call 624-5092 for registration information and an application form.*

REX 0608 ADVENTURES IN VOICE EDUCATION. *Dates:* minimum four-week commitment; schedule to be arranged between Aug. 1993 and Aug. 1994. *Contribution:* \$150.

Are you interested in the voice and how it functions? Learn more about this topic as you assist the project leader in researching, collecting data, compiling materials, and processing information about singing and teaching voice. The ultimate goal is production of a college text and video about singing and voice education. Required participant qualifications: library research skills and ability to use Macintosh SE30. Project leader is Clifton Ware, associate professor, School of Music. Location: Music Library and Ferguson Hall, Minneapolis campus. *Call 624-5092 for registration information and an application form.*

REX 0609 DECISION CASE FOR ENVIRONMENTAL EDUCATION. *Dates:* to be arranged. *Contribution:* \$150.

Volunteers will collaborate with the program for decision cases within the College of Agriculture to develop an original decision case study for use in a secondary education curriculum context. The specific case topic is to be selected by the participant with concurrence of faculty supervisor. REX volunteers will outline, research, and prepare one decision case and interpretive note for use in secondary education. Required participant qualifications: secondary teaching experience, the capacity to work independently, an interest in environmental issues involving agriculture, and an ability to translate ideas into writing. Project leader is Steve Simmons, professor, Department of Agronomy and Plant Genetics. Location: St. Paul campus and various case sites. *Call 624-5092 for registration information and an application form.*

REX 0611 FOOD ISSUE DECISION CASES.

Dates: to be arranged. *Contribution:* \$150.

The decision case is a teaching method that promotes critical thinking skills in students. The goal of the project is to develop decision cases usable in secondary education. REX volunteers will research an actual food-related decision case, help develop decision cases, and test the cases during the following academic year. Secondary teaching experience, inquisitiveness, good communication skills (especially writing), and a desire to improve one's own teaching skills are required. Project leader is Craig Hassel, assistant professor, Department of Food Science and Nutrition. Location: St. Paul campus and various other locations. Call 624-5092 for registration information and an application form.

REX 0612 ALZHEIMER'S DISEASE CARE GIVER TRAINING PROGRAM. *Dates:* to be arranged. *Contribution:* \$150.

The aim of this project is development of an educational program with formal classes and structured practicum for spouses of individuals with early or moderate Alzheimer's Disease. Participants will learn how to use the cuing and assistive techniques of the Adapted Work Program with home activities. Changes in both patient and spouse will be measured. The REX volunteer will develop educational materials, curricula, learning modules, and tools for measuring pre- and post-interventions. Skills in developing learning materials, especially approaches for adult learners, are required. Project leader is Melitta Maddox, adjunct instructor, School of Nursing. Location: VA Medical Center, Minneapolis. Call 624-5092 for registration information and an application form.

REX 0613 INCLUSIVE SCHOOL COMMUNITIES. *Dates:* to be arranged. *Contribution:* \$150.

The purpose of this project is to determine critical values and competencies for administrators and teachers in inclusive school communities. Activities include dialogue (focus groups and structured interviews) with experienced educators. REX volunteers will develop instruments, conduct groups, analyze data, and synthesize literature while working closely with the support of the research team. Volunteers should be organized, able to outline thoughts, and have good interpersonal skills. Project leader is Jennifer York, assistant professor, Department of Educational Psychology. Location: Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0614 CITIZENSHIP IN THE CLASSROOM. *Dates:* to be arranged. *Contribution:* \$150.

This project will assess how students and teachers view and understand important concepts in citizenship such as tolerance and patriotism. It will also focus on how teachers of social studies perceive their roles

as teacher and as citizen. The results will be used to write curriculum materials for use in secondary education and to conduct research on the curriculum's effectiveness. Q-sorts, interviews, and surveys will be used to evaluate these role orientations. The REX volunteers will aid in survey and Q-sort construction, help mail research materials to social studies teachers, arrange and conduct in-person interviews with local social studies teachers, and assist in data analysis. Good language, writing, and interpersonal skills are required. Project leaders are John Sullivan, professor, Department of Political Science; and Patricia Avery, associate professor, Department of Curriculum and Instruction. Location: Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0802 ARTISTIC DISCOVERY ABOUT 17TH-CENTURY NAPLES. *Dates:* schedule to be arranged. *Contribution:* \$150.

Although Caravaggio, an Italian baroque painter, has become familiar to many today, Caracciolo, another artist greatly influenced by Caravaggio, still remains relatively unknown and enigmatic. Professor Michael Stoughton, art historian, has been working on what will be the first book-length study of Caracciolo. He seeks the assistance of a research volunteer to translate and transcribe Latin documents about the artist's life. The project also involves library research on iconography of the Carmelite and Carthusian religious orders. Limited to one volunteer. Project leader is Michael Stoughton, professor, Department of Art History. Location: Jones Hall 107, Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0803 CITYSONGS: A TWIN CITIES DEMONSTRATION PROJECT IN MUSIC.

Dates: to be arranged. *Contribution:* \$150.

CitySongs seeks to promote healthy psychosocial development among diverse youth via popular music participation. At the pilot site, a popular music choir for 8 to 12 year olds is sponsored, as well as one for 13 to 18 year olds. Through regular, stable, and meaningful activity led by an admired role model, young people are taught the capacities for discipline, effort, and satisfaction at well-earned success. The REX volunteers will attend rehearsals for one choir and assist with attendance taking, provide additional adult support, observe participants, take daily field notes, and assist with the year-end evaluation. Required participant qualifications: ability to type field notes, ability to work with culturally diverse young people, and ability to work with adults of varying ages and racial, ethnic, and socio-economic groups. Project leader is Helen Q. Kivnick, associate professor, School of Social Work. Location: Hallie Q. Brown-Martin Luther King Center, St. Paul. Call 624-5092 for registration information and an application form.

Noncredit Courses

REX 0804 2D ON 3D. *Dates:* to be arranged. *Contribution:* \$150.

This project deals with flat or 2-dimensional images on 3-dimensional form. The images change proportion as the viewers change positions. Goals include the following: 1) the camouflaging of 3-dimensional form, 2) the enhancing of 3-dimensional form, 3) the counterpoint of 2-D rhythm with 3-D rhythm, and 4) using the former concepts to create significant form and expressive content. REX volunteers will help build, paint, and discuss strategy as well as analyze and develop criticism. Required participant qualifications: the skills that any elementary or secondary art teacher would have (i.e., simple flat painting experience). Project leader is David Feinberg, associate professor, Department of Studio Arts. Location: Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0902 THE ORIGIN OF ENGLISH WORDS. *Dates:* starting and ending dates arranged; flexible schedule. *Contribution:* \$150.

The history of words is as hard to trace and as interesting to study as the rise and fall of old kingdoms or the origins of planets. Some words have existed in English for more than 1,000 years and still no one knows from where they came. Even when the origins of words are known, vigorous debate about the details often continues. This project is part of a University of Minnesota effort to compile a new etymological dictionary of English. Volunteers will study bibliographies and journals and contribute to the files of the dictionary. Their contribution will be mentioned in the final product; individual scholarly projects (with or without academic credit) are possible. Project leader is Anatoly Liberman, professor, Department of German. Location: Wilson and Walter Libraries, Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0903 THE PRAGMATICS OF WORD ORDER IN SPOKEN SPANISH. *Dates:* to be arranged. *Contribution:* \$150.

Study the motivation of word order variation in three-constituent constructions. After training, REX volunteers will search transcriptions of recorded conversations in order to identify these constructions and classify them. Project leader is Francisco Ocampo, assistant professor, Department of Spanish and Portuguese. Location: Folwell Hall, Minneapolis campus. Call 624-5092 for registration information and an application form.

REX 0904 THE GERMAN LANGUAGE IN MINNESOTA. *Dates:* flexible schedule to be arranged. *Contribution:* \$150.

In an ongoing study, the project leader is recording the speech of Minnesota natives who speak German for a

cultural and linguistic analysis of the changes that have taken place in the language and culture since it was imported into Minnesota. REX volunteers will conduct interviews of Minnesota-born German speakers from regions around the state where such speakers are still found. Knowledge of German is required. Project leader is Evelyn S. Firchow, professor, Department of German. Location: various counties in Minnesota. Call 624-5092 for registration information and an application form.

Tentative Projects for Summer 1994

THE IMPACT OF SOIL FERTILITY ON CROP PRODUCTIVITY (REX 0105). Schedule to be arranged. *Project leader:* Carl Rosen, Department of Soil Science.

REDUCING THE NEED FOR PESTICIDES: DEVELOPMENT OF INSECT AND DISEASE RESISTANT VEGETABLES (REX 0147). Schedule to be arranged. *Project leader:* David W. Davis, Department of Horticultural Science.

INSECT BEHAVIOR: AN APPROACH TO DETERMINING THE INHERITANCE OF HOST PLANT RESISTANCE (REX 0149). Schedule to be arranged. *Project leader:* David W. Davis, Department of Horticultural Science.

INSECT POLLINATION IN PRAIRIES (REX 0150). Schedule to be arranged. *Project leader:* Catherine Reed, Department of Entomology.

THE PURPLE WARTYBACK: LIFE HISTORY OF A RARE FRESHWATER MUSSEL (REX 0152). Schedule to be arranged. *Project leader:* Mark Hove, Department of Fisheries and Wildlife.

KELHEIM: ORIGINS OF AN IRON AGE CITY (REX 0209). Schedule to be arranged. *Project leader:* Peter S. Wells, Department of Anthropology.

SOURCE, PRESENTATION, AND RETAIL PRICING OF FRESH VEGETABLE GREENS (REX 0252). Schedule to be arranged. *Project leader:* David W. Davis, Department of Horticultural Science.

TEMPERATURE EFFECTS ON DIFFUSION AND REACTION IN GLASSY-RUBBERY MATERIALS LIKE POTATO CHIPS (REX 0437). Schedule to be arranged. *Project leader:* Dr. Ted Labuza, Department of Food Science and Nutrition.

General Information

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Faculty

The teaching staff in Extension Classes consists primarily of University of Minnesota faculty. In some instances, faculty members from other educational institutions and specialists in professional and business fields have been selected to teach courses. All Extension Classes instructors are approved by the academic departments through which classes are offered.

Additional staff—Faculty other than those listed under each department may be assigned to teach certain courses.

CEE Distinguished Teaching Awards—Students and staff are invited to make nominations for the CEE Distinguished Teaching Award. The award is given annually to teachers providing credit and noncredit instruction offered or cosponsored by Continuing Education and Extension. Nomination forms are available from the Dean's Office (624-2517). Nominations are due by Mar. 15; awards are made in the fall.

Funding of the Extension Classes program

While the state legislature has begun to help fund Continuing Education and Extension, the Extension Classes program—including instructional, administrative and staff costs, and related costs—is supported mainly by students' tuition. Therefore, depending on overall enrollments, program adjustments are sometimes necessary, as is the cancellation of classes in which enrollment is low.

Student services fee

Continuing Education and Extension students registered for one credit or more may elect to pay the student services fee if they wish to use the services covered by the fee. Students may obtain a written fee

statement at the Student Relations Unit, 150 Williamson Hall, on the Minneapolis campus. If you have questions, contact the Student Relations Unit (625-5333).

Three student services (health service coverage, Minnesota Unions membership, and use of recreational facilities) may be elected and paid separately; see descriptions below.

If you are interested in hospitalization insurance, contact Boynton Health Service, 624-0627.

Campus activities, services and facilities

Art rentals, Frederick R. Weisman Art Museum (625-9495)

The Frederick R. Weisman Art Museum (formerly the University Art Museum) maintains a rental collection of framed original prints, watercolors, photographs, and drawings. Extension students with a University identification card and current fee statement may rent art works for use in the home or present place of residence. Art rental is located in the museum store at the museum's main entrance off the southeast corner of the pedestrian level of the Washington Avenue Bridge.

Hours of the new Frederick R. Weisman Art Museum are:

Monday through Friday	11 a.m. to 5 p.m.
Weekends	12 noon to 5 p.m.

All exhibitions are free and open to the public. Posters, catalogs, t-shirts, handmade jewelry, cards, and an array of unique gift items are available in the museum store. Hourly parking is available in the museum ramp. Call 625-9494 for more information.

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Recreational Sports Facilities and Programs

An Extension student may use the Recreational Sports facilities and programs by purchasing a Participation Permit at one of the Recreational Sports offices only: University Recreation Center (Minneapolis campus) or 104 St. Paul Gymnasium (St. Paul). Call 625-6800 or 625-8283 for the latest fee amounts. Proof of registration is necessary for purchase.

Students who cancel classes must surrender their permit, which becomes invalid immediately upon cancellation.

Students must present the Participation Permit each time they use the facilities. The sports facilities include swimming pools, fitness centers, handball/racquetball courts, squash courts, tennis courts, gymnasiums (basketball, volleyball, badminton) sports fields, etc.

Athletic tickets (624-8080)

University Extension students taking credit classes are eligible to purchase student season athletic tickets for men's intercollegiate athletic events (credit requirement is subject to change). Reserved tickets at reduced rates with specific seat assignments are available for football beginning in August.

Hockey season tickets will go on sale starting in September. Reduced-rate reserved season tickets will be available.

Basketball season tickets will be reduced-rate reserved seating. Tickets go on sale late in September.

For details on purchasing student tickets, please call the Athletic Ticket Office, Bierman Field Athletic Building, 624-8080. Hours are 9 a.m. to 5 p.m. Monday through Friday. Proof of registration is required. Ticket prices and regulations on eligibility and availability are subject to change.

All tickets purchased are nontransferable. If a student's classes are canceled by either the University or the student, athletic tickets must be returned to the Athletic Ticket Office.

Regulations governing purchase, transfer, and cancellation of the above tickets are available on request from the Athletic Ticket Office, Bierman Field Athletic Building (624-8080).

1993 Home Football Schedule:

September 11	Indiana State
September 18	Kansas State
October 2	Indiana
October 9	Purdue
October 23	Wisconsin
November 13	Michigan

Extension students may NOT pick up fee statements in advance at Wesbrook Hall. Register as early as possible by mail to insure you receive your fee statement back in time to pick up tickets. You also may choose to register and pay fees in person so you receive your fee statement immediately.

Women's intercollegiate athletic tickets (624-8080)

Any Extension student, with a current I.D. and Extension fee statement, may purchase tickets for women's intercollegiate athletic regular season events at the student price of \$1 (prices are subject to change). Tickets are available at the door one hour before any basketball, gymnastics, soccer, softball, swimming/diving, track and field, and volleyball event. Season ticket passes may be purchased at the Bierman Ticket Office. Youth group discount tickets may also be purchased at the Bierman Ticket Office.

There is no admission charge to women's cross country, golf, and tennis events.

Call 624-8080 for ticket information or the Gopher Sports Hotline at 626-STAT (7828) for 24-hour recorded updates and results.

Campus access for students with disabilities

The University of Minnesota has available accessibility maps for the Minneapolis and St. Paul campuses. The maps, *Access Guide for Students with Disabilities*, indicate handicapped parking areas, building entrance levels, elevators, curb cuts, and accessible buildings.

Those who would like copies of the guides should telephone Disability Services at 624-4037. Similar maps are located in the *Student-Staff Directory*.

Telecommunication devices for the deaf (TDDs) are available for use by students with hearing impairments at the following locations: Disability Services, 16 Johnston Hall, 624-4037, weekdays until 4:30 p.m.; Coffman Information Center, 138 Coffman Union, 625-4177, evenings and weekends until 12 midnight; St. Paul Campus Office for Student Affairs, 190 Coffey Hall, 625-9225, until 4:30 p.m. weekdays. Other locations are listed in the student-staff directory under TDD Network.

For information about the message relay system for people with hearing impairments, call the Minnesota Relay Service, 297-5353.

For blind students, tape and braille materials also are available from the Communication Center of State Services for the Blind, telephone 642-0500. Assistance on campus is available from the Office for Students with Disabilities, 16 Johnston Hall (624-

4037).

Wesbrook Hall is an accessible building. The ground-level entrance is on the right of the main entrance on Pleasant Street. Inside the building, go left to the elevator. Rest rooms are to the right on the ground floor.

Disability services

The University's mission is to provide optimal educational opportunities for all students including those with physical, sensory, learning, and/or psychological disabilities. The University recognizes that disabled students sometimes have unique needs that must be met for them to have access to campus programs and facilities. In general, University policy calls for accommodations to be made on an individualized and flexible basis. It is the responsibility of students to seek assistance at the University and to make their needs known.

One of the first places to seek assistance is the Disability Services (DS). This office is provided by the University of Minnesota to promote program and physical access, which means ensuring the rights of disabled students and assisting the University in meeting its obligations under federal and state statutes. DS provides direct assistance such as information, referral, advocacy, support, and academic accommodations (i.e., interpreters, readers, tutors, etc.) for enrolled and prospective students, as well as consultation to faculty and staff to ensure access to their programs and facilities. The office will also assist disabled students in obtaining services from other University or community resources. Educational specialists are available to assist students with learning disabilities, sensory impairments, and psychiatric disabilities. A counselor provides services to students with physical disabilities as well as serves as a liaison between the University and the Division of Rehabilitation Services. For more information, contact Disability Services, 16 Johnston Hall, 624-4037 (voice or TDD).

Computer purchases

The University of Minnesota Bookstores computer department has contracts with major computer hardware, software, and accessory companies to provide products at reduced prices. These prices are below the prices normally found at retail computer stores, but are available only to students, faculty, staff, and departments that are affiliated with the University of Minnesota.

The products that you can purchase from the University of Minnesota Bookstores computer department are tested and supported through the University. This ensures that the computer equipment and software

you purchase is compatible with all University requirements and services.

You are eligible to participate if you are enrolled in a course of study that will lead to a degree from the University of Minnesota. Contact the computer department at 625-3854 for details on eligibility.

Health service (625-8400)

Students registered for at least one Extension class and spouses of students may use Boynton Health Service on a fee-for-service basis. Students who are admitted to a University of Minnesota degree or certificate program and who are registered for at least one Extension class have the additional option of enrolling in Boynton's Extended Coverage Benefits Plan. This prepaid plan entitles students to receive certain outpatient services at no charge and to receive others at reduced cost.

Extended coverage may be purchased at the cashier's window, second floor, Boynton Health Service between 8 a.m. and 5 p.m. Be sure to bring your Extension fee statement and proof that you are in a certificate or degree program (your day school transcript or a letter from your adviser). Coverage must be purchased before the end of the second week of the quarter or first week of summer terms.

Students who pay the extended coverage fee receive general medical care and laboratory tests at Boynton at no charge. Partial charges are made for routine physical examinations and some specialty care. Full fees are charged for prescription drugs, contact lenses, eye glasses, and dental care. Mental health services, x-rays, and minor surgical procedures are charged to students for collection from their insurance. Students who do not have insurance must pay full charges for these services.

The Extended Coverage Benefits Plan does not cover hospitalization or surgery. Extension students who have paid for extended coverage and are registered for six or more credits may purchase the University-sponsored hospitalization insurance offered to day school students.

To obtain brochures describing both of these plans in greater detail, stop by 101 Wesbrook Hall or call 625-3333 and ask that the Boynton Health Service literature be sent to you. For specific questions concerning the Extended Coverage Benefits Plan, call 624-1471. For insurance questions, call 624-0627.

Boynton Health Service is located on the East Bank at 410 Church Street S.E. Hours are 8 a.m. to 5 p.m., Monday through Friday; closed holidays.

When the Health Service is closed, emergency care is available at the Emergency Department of University

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Hospital. Follow-up care after an emergency must be obtained at Boynton to be covered.

Libraries (624-4552)

The University of Minnesota—Twin Cities Libraries contain more than 4.9 million catalogued volumes. In addition to books and periodicals, the libraries have substantial holdings of government documents, manuscripts, archives, audio recordings, video tapes, and other materials.

Humanities and social science collections: The main humanities and social sciences collections are in Wilson Library on the West Bank and include American studies, anthropology, art, business, film, geography, history, language, literature, philosophy, political science, religion, sociology, and women's studies. The collections for education, library science, and psychology are found in Walter Library on the East Bank. The collections in design, vocational education, family social science, rural sociology, and textiles are found in the St. Paul Central Library on the St. Paul campus.

Science collections: The main science and technology collection, including chemistry, engineering, geology, and physics is housed in Walter Library. The health science collections, including allied health, dentistry, medicine, mortuary science, nursing, pharmacy, and public health are in the Bio-Medical Library in Diehl Hall on the East Bank. The agricultural and biological sciences collections are found in the St. Paul Central Library on the St. Paul campus.

Many **subject collections** are located in other buildings, as well. Call for locations on materials in horticulture, architecture, entomology, mathematics, forestry, plant pathology, law, journalism, maps, music, machine-readable data files, government publications, biochemistry, natural history, veterinary medicine, East Asia, South Asia, and the Middle East. Special collections exist for children's literature, social welfare history, and other areas.

Reference and research service points are located in major library buildings: for education, library science, and psychology, Walter Library first floor; for humanities and social sciences, Wilson Library, first floor; for business, Wilson library, second floor; for government publications, Wilson Library, fourth floor; for bio-medical subjects, Diehl Hall, third floor; for science and engineering, Walter Library, second floor; and on the ground floor of the St. Paul Campus Central Library.

Locker rental service

Full-size and half-size lockers are available for rental by the quarter. Deposit cards must be purchased on the

campus you are renting a locker: Coffman Service Center, East Bank; West Bank Cashier Section, Burs (W); the Skyway Service Center adjoining Willey and Blegen Halls, West Bank; and St. Paul Cashier Office, 107 Coffey Hall (except for lockers in the Classroom Office building; contact the Coffman Service Center).

Locker rental offices are at the Service Center in Coffman Memorial Union for the East Bank, the Skyway Service Center for West Bank, and on the St. Paul campus at 213 Agricultural Engineering and 32 McNeal Hall. For more information, call the East Bank main office at 625-0981 (East Bank and St. Paul lockers only).

The Coffman Service Center, on the ground level of Coffman Memorial Union, offers several additional services: postal services, MTC monthly pass and commuter ticket sales; parking coupons; discount movie passes; discount entertainment passes; and campus bus (Route 13) punch cards.

Lost and Found

For lost and found assistance, check the lost and found office in the building where you may have lost items. For additional help or information, contact one of the main lost and found offices: Coffman Information Desk, 625-4177, for East Bank; 100 West Bank Skyway, 624-6338, for West Bank; and the Coffey Hall Post Office, 625-8284, for the St. Paul campus.

Minnesota Unions memberships

A Minnesota Unions membership card allows part-time students to use all services, programs, and facilities of Coffman Memorial Union, St. Paul Student Center, and the West Bank Union. Students enrolled in at least one University of Minnesota class (credit or noncredit) are eligible to purchase the membership card. The cost of the card is \$30 a quarter (subject to change).

The membership card entitles students to reduced rates for films, concerts, dances, and other admission events; recreation and outings services including bowling, billiards, table tennis, table games and amusement games, outings rental equipment; music-listening centers; the Coffman Union Aircraft Studio; use of meeting rooms at the St. Paul Student Center and West Bank Union; discounted membership at the Outdoor Store; and participation in special student events such as tournaments.

Membership cards are available from 8 a.m. to 4 p.m., Monday through Friday, in room 220 Coffman. After 4 p.m. and on weekends, inquire at the Information Center. For more information, call the CMU Administration Office at 625-7666 between 8 a.m. and 4:30 p.m.

Available without membership are lounge space, lost and found, photocopy service, bus pass sales, food service, and other services (not always available evenings or at all union locations).

Parking facilities

Parking for Extension students is available in several University public parking facilities, and in some contract facilities, after 4:30 p.m. on weekdays. Parking rates vary by facility depending on proximity to campus and the facility type. Please call 626-PARK (7275) to request a parking map.

When special events, such as concerts and athletic games, are occurring on campus, special event rates go into effect at some facilities. **However, Extension students may park in Lot 33 on the East Bank (at the intersection of Fifth St. S.E. and 17th Ave. S.E.) after 4:30 p.m. for the regular daily rate if they have a special event hang tag.** Call Extension Classes at 625-3333 about obtaining a special event hang tag.

Please call parking services at 626-PARK (7275) if you need more parking information.

Disabled parking—Some of the parking facilities and metered areas have designated disabled parking spaces. A state-issued disabled permit is required to use these spaces. Disabled patrons are charged the same parking rates as other patrons, except at the meters which are free for disabled patrons. For more information on disabled parking, call the University Police department at 624-3550 or the Office for Students with Disabilities.

Phones

Campus-only phones (free of charge) are located at several convenient indoor and outdoor locations on the Minneapolis and St. Paul campuses. They can be used to call other University numbers but cannot be used for placing off-campus calls. To call a University number from these phones, dial the last five digits of that number. To call University Information, simply dial "O" for Operator. (University Information is open weekdays from 7:45 a.m. to 4:30 p.m.) **To report any emergency, dial 911.** This 911 emergency number is answered 24 hours a day.

A campus phone is located in the lobby of Wesbrook Hall.

Police services

The University Police Department is your full-service law enforcement agency for the campus community, available to Extension students and others for responsive crime control, emergency, and other related public service and assisting roles.

Strategic priorities of prevention, interception, and investigation are implemented by almost one hundred employees, including over forty security monitors who are University students providing building security, crime reporting, and rules enforcement. Regular officers are extensively trained, certified according to state standards, and completely authorized agents of the criminal justice system. You are urged to help them help you—report crimes, take advantage of informational and prevention programs by the department, and by all the means that can be achieved together—protect yourself. Contact University Police from any campus phone by dialing the appropriate telephone numbers listed below:

Police-Fire-Medical Emergency (only)	911
Escort	624-WALK
Non-urgent contacts (dispatcher)	624-7828
Chief of Police	624-2575
All other (including program requests)	624-3550

Publications

Info

Info, a newsletter for University Extension students, is published monthly (except May, June, and July). It contains information important to Extension students, faculty, and persons interested in learning more about University Extension Classes. Issues include articles on new courses, activities and facilities open to Extension students, registration information, faculty, and timely University policy decisions which affect Extension students.

Info is mailed automatically to all Extension students who have registered for classes within the past two years. To place someone's name on the mailing list, call 624-2388 (birth dates required for coding purposes).

Student-Staff Directories

University student-staff directories are available at Twin Cities campus bookstores to Extension students with a current paid fee statement. The directory contains phone numbers and addresses of University offices, faculty, and staff members and phone numbers and addresses of Twin Cities campus day students. The directory also is available to e-mail users through Gophernet.

The Minnesota Daily

The University of Minnesota student newspaper, The Minnesota Daily, is available on campus Monday through Friday during academic quarters and by mail subscription. The Daily covers campus and community news and has a book review section on Wednes-

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days, an arts and entertainment section on Fridays, and an international section on Thursdays. Subscription rates (subject to change) are \$17 a quarter for fall, winter, and spring; \$14.75 for summer sessions; and \$55 a year (150 issues). The Minnesota Daily, University of Minnesota, 720 Washington Ave. S.E., Suite 349, Minneapolis MN 55414 (627-4080).

Field Experience (OSLO)

Field learning opportunities (including community service) are available to University students in a number of areas. The Office for Special Learning Opportunities (OSLO) maintains directories of a wide range of community resources that can be used for internships and other types of field experience learning. In some cases, it is possible to earn credit for a study project developed in conjunction with the field experience and carried out under the direction of a University faculty member. Students should talk to an instructor or see an OSLO adviser in 220 Johnston Hall. Call 624-7577 to talk to an adviser or to arrange for an appointment.

Concerts and Lectures

Northrop Auditorium has been a major source of entertainment and a cultural outreach for the University of Minnesota for over 60 years. Diversity reigns in its year-round programming. The Northrop Dance Season presents major nationally and internationally acclaimed companies, those which are currently the most exciting artistically. The 1993-94 season includes The Parsons Dance Company, American Indian Dance Theatre, Amanda Miller Dance Company, Dance Theatre of Harlem, Principal Dancers of New York City Ballet, Bebe Miller Dance Company, Paul Taylor Dance Company, and Miami City Ballet. The 1993-94 Discover Series, co-presented by Northrop and Walker Art Center to show new directions in performance, features the Charlie Haden Liberation Music Orchestra, a new sound sculpture by Trimpin, Amanda Miller Dance Company, Bebe Miller Dance Company, Julius Hemphill, and a solo piano concert by Phillip Glass. The Joffrey Ballet's Nutcracker highlights the holiday season. A lively program of free events is offered each summer. For further information, call the Northrop Ticket Office (624-2345).

Student Employment Center

Students enrolled for six or more Extension credits may use the University's student employment services. The Student Employment Center posts on- and off-campus job vacancies on bulletin boards outside the office in 120 Fraser Hall. After review of eligibil-

ity and qualifications, students may be referred to the employer. The employer makes the hiring decision. Student service is offered 8:30 a.m. to noon and 12:30 to 4 p.m. weekdays. (Job listings are posted outside the office and may be viewed evenings.) Proof of registration is required. For more information and details on eligibility, contact the Student Employment Center, 120 Fraser Hall, on the Minneapolis campus (624-8070).

Theatre

Thousands of University of Minnesota students have attended play performances at University Theatre. Whether in the modern four-theatre facility of Rarig Center, or on board the popular Minnesota Centennial Showboat, University Theatre audiences see the brightest young talent in the Twin Cities. Performances are offered throughout the year and ticket prices remain low. (Extension students are eligible for discounts.) Information about current offerings is available by calling the University Theatre Ticket Office at 625-4001.

Transportation between campuses (bus)

Transportation between the **Minneapolis and St. Paul campuses** is available seven days a week on special white or maroon-and-gold buses marked "Route 13." The West Bank terminal is in front of Blegen Hall and the main East Bank campus terminal is in front of Jones Hall (intersection of Pleasant Street S.E. and Pillsbury Drive S.E.). The St. Paul terminal is adjacent to the St. Paul Student Center. Buses leave these terminals at 5-minute, 10-minute, and 30-minute intervals on weekdays and at 40-minute intervals on week nights (from 6:45 p.m. to 11:05 p.m.) and weekends.

There is no charge for riding these buses unless one enters or exits at stops located off campus (see *Student-Staff Directory* for route map and bus stops). The fare at off-campus pay stops is 85 cents (\$1.10 during rush hours, Monday through Friday from 6 a.m. to 9 a.m. and 3:30 p.m. to 6:30 p.m.) Reduced-fare punch cards are available at the student unions and bursar offices.

A popular park and ride stop is located on Como Ave. at 29th Ave. S.E. for students using the **Como Avenue park-and-ride facilities**. Beginning July 1, there is a charge to park at the Como lots and there is a charge to board or exit the bus to either campus (cost subject to change). Monthly passes (selected months) and bus fare discount cards for the Como Lot and Rollins Lot (near 15th Ave. S.E. and Rollins) can be obtained at the West Bank Union Skyway, Coffman Union, and at the Bursar's office in 145 Williamson Hall, the

Cashier's office in 107 Coffey Hall, the West Bank Bursar's office in 101a Anderson Hall, and at U of M Transit Services, 2818 Como Ave. S.E., Minneapolis.

With the new Transitway (exclusive roadway for buses between the Minneapolis and St. Paul campuses), there is frequent service via the Transitway and less frequent service along the previous Como Avenue route.

The Route 13 campus buses also stop at the Transitway Parking Lot stops (Huron Blvd. Parking Complex), the Recreational Sports Complex on University Ave., and at the Fairgrounds Parking Lot.

Transportation is available between the **East Bank and West Bank** every 12 minutes until 11:05 p.m. The West Bank terminal is in front of Blegen Hall, and the main East Bank terminal, Eddy Hall, is on Pleasant Street S.E. at Pillsbury Drive (across the street from Jones Hall). East Bank-West Bank bus service also is available, during the evening, at 40-minute intervals, on Route 13-FT and 13-UT buses operating between Blegen Hall and Lyon Lab/Amundson Hall on Washington Avenue near Church Street.

Current schedule information is posted at each terminal and pocket schedules are available on Route 13 buses, at the student unions, and at U of M Transit Services, room 216, Printing and Graphic Arts Building, 2818 Como Ave. S.E., Minneapolis, MN 55414 (telephone 625-9000, Monday through Friday, 7:45 a.m. to 4:30 p.m.)

For information about parking rates, call 626-PARK.

Student Board (Extension Classes)

The Extension Classes Student Board was formed to serve Extension students, faculty, and the administration in the exchange of ideas and information pertaining to the Department of Extension Classes.

It is composed of the student senators and alternates elected to the University Senate, appointed Extension students, the dean of Continuing Education and Extension (or a representative) and an Extension Classes faculty member. Any Extension student is eligible to be appointed to the Student Board. Eligibility is registration in any Extension class. There is no credit requirement.

All students are urged to communicate their ideas, suggestions, and concerns to their Student Board. Students interested in joining the board, or in talking with members about a particular concern, should call 626-8501 for referral to a board member.

University Senate

University of Minnesota students are entitled to serve in the University Senate. The University of Minnesota is one of the few universities in the country in which students may be elected to the academic governing body. So far as is known, it is one of only a few universities whose Extension students also serve in that body.

The University Senate considers matters of importance to the academic governance of the University, including the internal affairs of the institution as well as the role of the University in the community. Student representatives are elected from 19 colleges, schools, or other academic units within the University, including Continuing Education and Extension which is entitled to elect eight senators and eight alternates to the senate. Students elected to the University Senate must serve as active members of the Extension Classes Student Board.

Eligibility for candidacy—A candidate for election from Continuing Education and Extension must have earned a minimum of 12 University of Minnesota credits in the last five years and be carrying, at the time of election, three credits in Extension Classes (semester, quarter and special term registrations count equally). Students wishing to become candidates may file for candidacy during January 1994 at 202 Wesbrook Hall, Minneapolis campus; or call 626-8501 for deadlines and information.

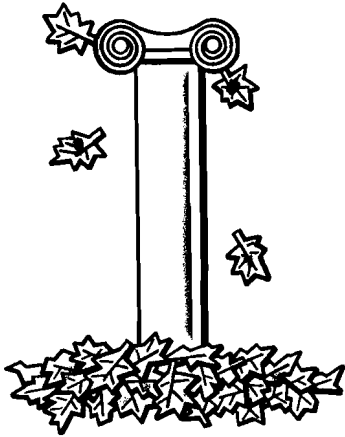
Upon application for candidacy, eligibility will be verified. Once certified as a candidate, the student is free to campaign in a manner in harmony with the guidelines (available at time of filing) established by the Assembly Committee on Student Affairs. Extension Classes students will be provided with a brief sketch of each candidate's qualifications.

The candidates receiving the greatest number of votes will be elected to fill those senate positions allotted to Extension Classes (based on enrollment). Alternates will be selected from the group of candidates receiving the next highest number of votes.

Election of Extension Classes senators and alternates will be held during the mail-in election period during spring quarter. Please read the following carefully:

Eligibility for voting—To be eligible to vote in the election a student must be registered for credit in Extension Classes and return an official ballot by mail or in person by the close of the election period (about the first week of spring quarter; dates vary each year).

For further information, call 626-8501.



Adult and part-time students, we're for you!

On the next 15 pages, read about:

- Student services
- Campus facilities and services
- Learning opportunities through CEE
- Special programs, options, activities

You're invited ... to Education Fest

Continuing Education and Extension will present its first "Education Fest," Wednesday, Sept. 8, 5 to 8:30 p.m., at Nolte Center on the east bank campus.

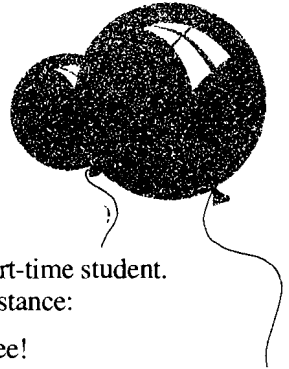
Education Fest is an open house for you, the adult and part-time student. The atmosphere is informal, but there's plenty to do. For instance:

- Learn about degrees and extension classes
- Park free!
- Pick up catalogs, course information
- Talk with a program adviser
- Get information about financial aid
- Take a campus tour
- Shake hands with Goldy Gopher
- Register for prizes
- Free posters, bookmarks, other items
- Refreshments
- Discover new learning opportunities: self-paced independent study courses, research internships, management seminars, teacher education, and much more.

The registration office in Wesbrook Hall is open until 8 p.m., and you may register for a class that evening.

Free parking is provided in Church Street Garage, on campus next to Nolte Center, on the evening of the Education Fest. From University Avenue, turn right on 17th Ave. S.E. (Church Street on campus). Go straight ahead one and one-half blocks to the parking facility.

Have questions, need directions? Call 624-2388.



About the University:

Some public misperceptions and some CEE realities

Misperception: *All the classes are so big.*

Reality: In winter quarter 1991, only 6 of over 500 Extension classes had more than 100 students in them. Most classes range from 10 to 30 students.

Misperception: *There is no place to park.*

Reality: On the east bank and west bank campuses, there are hundreds of parking spaces available within three blocks of the classroom buildings. Average cost is about a dollar for surface lots, \$2 to \$4 for the ramps and garages, including the new ramp at Fourth Street S.E. and 17th Avenue S.E. Hundreds more low-cost parking spots are available at the commuter lot on Como Avenue and 29th Avenue S.E. Just park and ride the intercampus bus for 35 cents each way (subject to change).

Misperception: *You're just a number at the "U."*

Reality: You will have your own CEE adviser to help you in selecting classes and planning your education—whether you just want to take a few courses or work toward a master's degree. These are full-time professional academic advisers who know just about everything there is to know about the University—and what they don't know, they'll find out and report to you. You can come in and visit (make an appointment for your convenience) or call anytime.

Misperception: *You can never get the classes you need.*

Reality: Hundreds of classes are scheduled each term. Often several sections of a required course are offered each quarter; choose the one that fits your schedule. Students who register by mail within the first day or two of registration get their first class choice most of the time. If you are in a degree program and there is a class you absolutely must have to continue progress toward your degree, you may register early (consult with an adviser on how to do this).

Misperception: *The entrance requirements changed a few years ago. It's a lot harder to get in now.*

Reality: Anyone can take University Extension classes and find out whether they're "college-able." If you're just registering for a class, you don't need to worry about high school record, class standing, or college entrance exams.



Getting Started

Getting started on an education through Continuing Education and Extension isn't difficult. Here's some of the ways you can learn more.

Information meetings

The Continuing Education and Extension Counseling Office conducts several regularly scheduled information groups for prospective students in August and September (and more later in the year).

You will learn about registration options, procedures, and general University requirements and have questions answered about getting started as an Extension student. Call CEE Counseling at 625-2500 to reserve your space in the next meeting.

Financial aid workshops

Want to know more about financial aid options for adult and part-time students? Attend a free financial aid workshop, another service of CEE Counseling, and learn about grants, loans, and scholarships. If you're serious about completing a degree or certificate, you'll find many of the same options are available to you that regular daytime students have (and some that they can't get). Financial aid workshops are offered every month. Call 625-2500 if you would like to attend.

You are not alone

Extension students juggle lots of responsibilities—college, job, family, community activities—and sometimes it seems there just isn't enough time for it all. It can help to talk with others who share your problems and your dreams. Check with an adviser at CEE Counseling (625-2500) for referrals to campus organizations and services that fit your needs and interests. The Extension Student Board, for example, meets monthly and works on issues important to adult and part-time students.

We're here when you're here. . . and then some

The Extension Classes registration office in 101 Wesbrook Hall (east bank) is open until 8 p.m., Monday through Thursday, when classes are in session. You can register, cancel, pay fees, inquire about your registration status, and obtain information easily in one place.

Saturdays, too—Now the registration office is open one Saturday morning, 9 a.m. to 1 p.m., during in-person registration dates for each term; an adviser will be available, also. In addition, advisers are available for evening appointments; call 625-2500. And the east bank and west bank bookstores are open evenings early in the term and several Saturdays as well; check the bookstores section of this bulletin for dates.

Plus, we've added FAX registration, telephone textbook orders, and a free new seminar called CareerQuest for those who are ready to make a change in their lives.

Study Skills Help

Tutoring program for second languages

Evening classes in foreign languages are some of the most popular Extension courses offered. People take language classes for lots of reasons—to earn credit toward degree requirements, to prepare for travel outside the U.S., and to learn more about their own ancestry.

To help insure your mastery of a new language, Extension Classes has instituted a new tutoring program in second languages.

Tutors will be available evenings to answer your questions, help you review, explain usage, and provide the support you need to help make your learning experience a satisfying one. It's free, take advantage! Tutors are on duty or can be arranged in the following languages; call the appropriate department for hours and location.

German 625-2080

French 624-4308

Spanish 625-5858

Preparation for Graduate School

Through the Compleat Scholar/Practical Scholar, several short-term classes or one-session workshops are offered to help you prepare for graduate school admission or study. An introductory workshop is offered this fall on applying to graduate school. Later, classes are offered in financing graduate school, assessing math skills for graduate admissions exams, preparing for the GRE (also GMAT and PPST), and other topics. See the University Access section of the Compleat Scholar course listings or call 624-8880 for details.

Helpful Courses

Many credit and noncredit courses (at regular tuition rates) are offered in study skills. In General College, *GC 1421 Writing Laboratory: Basic Writing*, includes tutorial help. Also offered are *GC 1422 Writing Laboratory: Communicating in Society* and *GC 0402 Grammar and Usage Review*. Other credit courses to aid in skills development include *LASK 1001 Becoming a Master Student* and *Rhet 1441 College Reading*.

For help in mathematics, read about the Preparatory Mathematics Program offered by the General College and the Compleat Scholar/Practical Scholar. The program aids adult and re-entry students in correct placement in noncredit courses. Examples include *GC 0621 Elementary Algebra*, *GC 0623 Plane Geometry*, *GC 0625 Intermediate Algebra*, and others. Compleat Scholar/Practical Scholar offers supportive services along with these courses, including the Math Skills Assessment Clinic and Math Tutorial (free weekly sessions) especially to help those who encounter blocks in math work. See the University Access section of the Compleat Scholar in the noncredit course offerings.

Students of Color

Students also may contact the appropriate learning and resources center about study aids available there: American Indian, 624-2555; Asian/Pacific, 624-2317; African American, 625-1363; Chicano/Latino, 625-6013.

Counseling and Advising: We Can Help

If you're wondering . . .

What kinds of degrees and certificates can be completed through Extension Classes?

How do I go about planning a program?

How do I choose a career or major that will be consistent with my goals and interests?

What additional education would I need for a new career or to get ahead in my present job?

How does my previous college work transfer to the University of Minnesota?

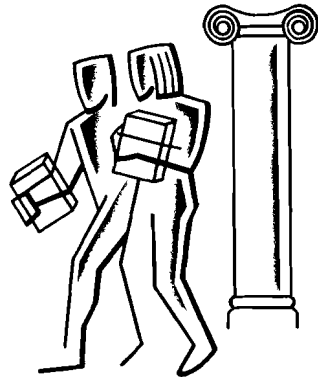
. . . then contact the CEE Counseling Office, 314 Nolte Center, at 625-2500.

Continuing Education and Extension's professional staff of academic advisers and counselors are ready to assist you in formulating your educational and career goals.

Advisers are available for day or evening appointments and can be reached by phone to answer questions, as well.

Registration information meetings (offered every term) give new students assistance in registering, general requirements, degree program admission, and other information to help you get started. Call 625-2500 to sign up.

The CEE Counseling Office provides career counseling for current or prospective students. Career testing is available to help you learn more about your values, interests, and personal characteristics to help you achieve career and educational goals. Other career programs are offered throughout the year. A fee is charged for career counseling programs. Call 625-2500 for more information. career and educational goals. Other career programs are offered throughout the year. A fee is charged for career counseling programs. Call 625-2500 for more information.



We're "U"ser friendly

Bringing the "U" to you

The classes you need. Whether it's for professional development, earning a degree, or just personal-interest learning. Classes are scheduled evenings and weekends when working people can take them. Everything you need from accounting to zoology. From one-morning workshops to graduate degrees. You can even take regular day school classes.

The people you need. The services you must have are in place, and Extension staff are working to make more of the University accessible to you. The University's experienced faculty and support staff work evenings and weekends for you. Advising, instructor's office hours, bookstores, libraries, lounge areas, parking, registration—we're delivering the services it takes whether it's through later hours, by mail, or by telephone.

The New Nolte Study

The newly remodeled study on the ground floor of the Nolte Center for Continuing Education is the perfect place to study, stop and relax before class, meet friends and classmates, or pick up Continuing Education and Extension publications and registration materials.

The Nolte Study is open week nights, Monday through Thursday, until 7 p.m. An Extension staff member is available to help answer questions and make referrals.

Nolte Center is conveniently located on the East Bank campus near many classroom buildings. It is within easy walking distance to Extension offices in Wesbrook Hall, to Walter Library, and to University parking complexes on Fourth Street S.E. and on Washington Avenue.

Building accessibility for students with disabilities

Wesbrook Hall became an accessible building in 1991. The ground-level entrance is on the right side of the main entrance on Pleasant Street S.E. Inside the building, go left to the elevator. Restrooms are to the right on that level. Several parking spaces in front of Wesbrook are reserved only for vehicles with handicapped permits.

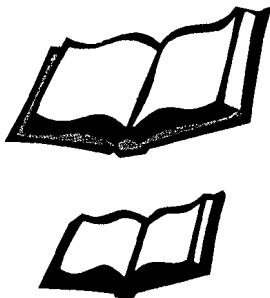
Call Disability Services, 624-4037, for campus accessibility maps that show handicapped parking places, building entrance levels, elevators, curb cuts, and accessible buildings.

For the hearing impaired, a TDD (625-4177) is available at the Coffman Information Center, 138 Coffman Union, evenings and weekends.

Campus escort service: 624-WALK

The University police department conducts an evening campus security escort service until 1 a.m. on all campuses during regular academic terms. Security escorts will accompany Extension students between buildings and to parking lots or bus stops on or adjacent to campus. Use a campus phone to request an escort at 624-WALK.

Bookstores: Where to Find What You Need



Convenience, service, and much more

- NEW—telephone book orders (call in and have your books shipped to you)
- VISA, Mastercard, Discover
- Computer sales at discount prices to registered students
- Art materials, school supplies, notebooks, U of M sportswear, popular and reference literature, greeting cards, even gum and candy.

• Extended hours continue, too. Fall through spring, the Minnesota Book Center on the East Bank is open Monday through Thursday until 5:30 p.m. (Fridays until 5). In addition, all bookstores are open evenings early in the term. The Minnesota Book Center (east bank) and H.D. Smith Bookstore (west bank) also are open on several Saturdays.

• Bookstores post lists of required textbooks for each class. Textbook information is available by telephone and books can be sent between the St. Paul campus and Minneapolis campus bookstores.

Check the index for the page number where you will find more about bookstores and hours.

University of Minnesota Bookstores and Locations

The Minnesota Book Center in Williamson Hall—East Bank (625-6000). Courses in the College of Liberal Arts (except for CLA departments listed below at the Smith Bookstore), General College, College of Education, and the Institute of Technology.

Harold D. Smith Bookstore—West Bank (625-3000). School of Management. CLA in history. Afro-American and African studies, political science, geography, sociology, international relations, theatre arts, music (and music education), studio arts, economics, public affairs, and urban studies.

Books Underground—St. Paul (624-9200). Books for classes scheduled on the St. Paul campus.

Health Sciences Bookstore—Health Science Unit A (625-8600). Books for classes offered by departments in the Medical School, School of Dentistry, College of Pharmacy, School of Nursing, School of Public Health, mortuary science, and other health sciences courses.

Student Board; Rec Sports

Student Board: Get Involved

Seeking more graduate-level Extension classes. Recognizing outstanding Extension students. Improving campus security. Reviewing student services. Presenting the Extension student's viewpoint to University and government officials. A forum for ideas and issues.



These are the kinds of concerns, problems, and opportunities the Extension Classes Student Board considers every year—issues important to Extension students. Guests at student board meetings have included University central officers, regents, legislators, and department heads.

You can join the student board at any time when you are registered as an Extension student. Each spring, Extension students are elected to the University Senate, the primary academic governing body of the University. Student senators also serve on the student board.

All students are urged to communicate their ideas, suggestions, and concerns to the student board. If you would like to speak to a board member about a particular issue, call 626-8501 to leave a message. For information about meetings or joining the board, call 625-1078 or stop by 200 Westbrook Hall weekdays between 8 a.m. and 4:30 p.m.

Be a Sport!

Enjoy recreational sports activities of all kinds to help you keep in shape and to unwind from work or study.

As a registered Extension student, you are eligible to purchase the Department of Recreational Sports participation permit. You may participate in organized sports and intramurals and in open recreation (including the use of many new University recreational facilities such as racquetball and tennis courts, fitness equipment rooms, swimming pools, and gymnasiums).

The individual, dual, and team intramural sports include soccer, tennis, basketball, bowling, ice hockey, swimming, broomball, softball, track, volleyball, flag football, and many more.

For men and women, clubs (over 50 of them) are organized for archery, badminton, ballroom dance, bowling, crew, soccer, rugby, fencing, cycling, martial arts, sailing . . . plus much more.

For further information about these programs and activities, telephone Rec Sports at 625-6800 or drop by 101 Cooke Hall on the Minneapolis campus (on the St. Paul campus, 104 St. Paul Gym).

Completing a Degree Through Extension Classes



You can complete a University of Minnesota bachelor's degree any one of several different majors through Extension registration. The courses you take and the graduation requirements you meet are determined by the college that grants the degree—not Extension Classes. This means your degree is the same as the one day school students earn.

You must be admitted to a college to get a degree. Simply registering for classes and compiling credits does not mean you are in a degree program. Meet with an academic adviser from CEE Counseling before you begin taking classes so you can determine when to apply for admission into a degree program. Call CEE Counseling at 625-2500 to make an appointment.

Degrees and majors

Undergraduate degrees from the Carlson School of Management, College of Liberal Arts, University College, Institute of Technology, College of Agriculture, and College of Human Ecology can be completed—or almost completed with some substitution, previous course work, or day school registration—in the following areas. (*This list is subject to change annually.*)

Business—General Management (B.S.B.)

Business—Accounting (B.S.B.)

Anthropology

American Studies

Art History

Studio Arts (B.A.)

Biology (B.A.)

Civil Engineering

Child Psychology

Computer Science

Economics

Electrical Engineering

English

History

Individualized Study Program (B.I.S.)

Individually Designed Interdepartmental Major

Inter-College Program

Mathematics

Mechanical Engineering

Philosophy

Political Science

Program for Individualized Learning

Psychology

Sociology (B.A. or B.S.)

Speech-Communication

Completing a degree will require careful planning and scheduling of classes, so see an adviser early and often. See the degrees section near the end of this bulletin for more information, also.

Innovations and Excellence: All our best to you



Take advantage of new small-group classes that stress interaction with University faculty, interaction with your peers, and academic challenge unequaled anywhere in the country. See the departmental listings in the credit section of this bulletin for complete descriptions.

Interdepartmental Studies: Learning isn't what it used to be. It's better.

For complete descriptions of these Interdepartmental Studies courses, see the credit courses section of the bulletin.

ID 3334 Goethe and Newton: A Study in Science and Belief. Examine the opposing ways in which Newton and Goethe reconciled their scientific researches with their spiritual beliefs. Physics professor Roger Jones and Scandinavian studies professor William E. Mishler.

ID 5525-5526 Garbage, Government, and the Globe. Garbage and waste—and how to handle it—as it affects the economy, environment, politics, and health. Faculty from several disciplines.

ID 5615-5616-5617 Ways of Knowing. Faculty from six very different areas—from biology to political science—review in 5-week courses the way they study, experiment, and draw conclusions about a body of knowledge. There are startling similarities and differences. Faculty from several disciplines.

ID 3925 Life/Career Planning. Faculty from College of Liberal Arts Career Development will help students explore and reassess their skills, values, interests. Each student will develop an individualized career plan.

Hidden Treasures—an academic assortment

Pol 1001/Econ 1102 American Government/Principles of Macro-Economics. A combined offering of two introductory courses that reflects their real-life integration.

Pol 5610/Phil 5760 Topics: Ethics—Who or What Has Moral Standing? Emphasizes the development and exercise of deductive and analytical skills. Questions to be addressed include: Do nonhumans (animals) have moral claims on us? What responsibility do we have to future generations?

Chn 3162 Chinese Fiction in English Translation. Knowledge of Chinese not required. Discover Chinese narrative prose from 1200 to 1900.

Slav 3511 Southeast Europe: Slavic Cultural Diversity. Understand the roots of cultural and ethnic diversity of Slavic peoples.

WoSt 3100 Topics: The Significance of Anita Hill. Analysis of the famous hearings with special attention to issues of class, gender, race, and sexuality.

Honors Courses in Extension Classes

Special Honors Opportunities are offered by the College of Liberal Arts to bring together the very best Extension students and some of the University's outstanding faculty. Admission is by special permission.

HSem 3060 American Literacy and Cultural Diversity. English professor Chris Anson (winter).

HSem 3090 Education and the Good Life: The Controversy about Education in 19th-Century Russia. Gerald M. Erickson, professor of classical and near eastern studies (spring).



Independent Study: Educational Freedom

Credit courses by correspondence

An Independent Study course from the University of Minnesota can round out your continuing education plans. We've heard about your busy

life—work, family responsibilities, numerous activities—and we know your need for flexibility. With Independent Study courses from Continuing Education and Extension, the University adjusts to *your* schedule.

You can enroll in Independent Study courses at any time—by phone, fax, mail, or in person. VISA and Mastercard are accepted for tuition payment and other expenses. Order books and supplies by mail, and complete course work where you are and when you want. You never have to set foot on campus, and you may take up to one year to complete your course.

These are full-credit courses that can be used toward distribution requirements for University degrees and CEE certificates. All courses come with a study guide that coordinates your textbook reading, gives study notes, and explains assignments. In addition, many courses include video cassettes, audio cassettes, or computer disks. Graduate credit is available for selected television broadcast courses.

Here are a few of the approximately 350 courses.

Arts and Humanities

Literature of American Minorities (Engl 1591)

Introduction to African Literature (Afro 3601)

Composition and Communications

Preprofessional Writing for Business (Comp 3032)

Writing in the Social Sciences (Comp 3014)

Intermediate Fiction Writing (EngW 3102)

Magazine Writing (Jour 3173)

Math and Science

Heredity and Human Society (Biol 1101)

Biology and the Future of the Earth (Biol 3051)

Precalculus (Math 1201)

Genetics (GCB 3022)

Business and Management

Introduction to Management Accounting (Acct 3001)

International Business (BGS 3004)

Business Policy: Strategy Formulation and Implementation (Mgmt 3004)

Social Sciences

Racial and Ethnic Diversity in Families (FSoS 5500)

Cultural Pluralism in American History (Hist 1305)

Environmental Problems (Geog 3355)

Knowing, Learning, Thinking (EPsy 5112)

Foreign Languages

Select from courses in Danish, French, German, Greek, Italian, Latin, Norwegian, Russian, Spanish, and Swedish.

We're listening. For your copy of the Independent Study course bulletin, please call (612) 624-0000 or 1-800-234-6564.

The Compleat Scholar, Management Advancement Program



The Compleat Scholar and Practical Scholar programs make up a comprehensive curriculum of courses offering University learning without credit. Compleat Scholar courses focus on areas in the liberal arts—the arts, literature, social sciences, natural and physical science, and writing. Practical Scholar courses focus on problem-solving and skill-building areas—human development, practical insights, and academic skills.

These courses are scheduled for one to eleven meetings and offer stimulating and challenging learning in lecture and discussion format without grades or exams. Some courses include field trips and guest speakers. All are led by experienced instructors, most by University faculty.

A sampling of titles for this year appears below. See the **Noncredit Course Offerings** section of this bulletin for complete listings. Or call 624-8880.

Othello: The Play, The Films, the Guthrie Production
Art of the Beatles: Their History and Music
Photography: Studio Lighting
International Folk Dancing
Imagining the Holocaust
Change in Rural Minnesota
The Legacy of JFK: Camelot Thirty Years After
Looking Good: The Politics of Health and Beauty

Philosophy of Self and Consciousness
Living Twice: Writing Autobiography
The Art of Storytelling
Wanda Gag and After: Children's Picture Books
Finding a College That Fits: Helping Your Child Make Choices
Fighting Fair in Intimate Relationships
Exercise and Health For Women
Physics and the Meaning of Life

Management Advancement Program (MAP)

If you are a professional who remains committed to your own improvement, an executive or manager concerned with developing the talents of those you supervise, or a decision maker looking to gain an edge for your organization, then MAP is for you. The Management Advancement Program provides up-to-the-minute seminar education at highly competitive rates and taught by top-notch leaders with a wealth of private-sector experience.

The seminars and workshops of the Management Advancement Program meet at the University's comfortable Earle Brown Conference Center in convenient one- to three-day time blocks. Before and after each program, the Management Advancement Program offers each registrant a unique opportunity to make sure his/her learning objectives are met and questions answered. MAP seminar learning, where the University serves business professionals. Call 626-8713 for registration materials. A sampling of this year's workshops includes:

Handling Difficult People
Coaching Employees to Improve Performance
Making Teams Work Better
Cultural Diversity: Managing Differences
Leadership, Power, and Vision
Creating Fast-Cycle Business Processes
Interpersonal Communication

Getting Unstuck—Breaking Through Barriers to Change
Reality-Based Re-Engineering
Barcoding
Finance and Accounting for Managers
Multi-Cultural Marketing
Quality Customer Service



Split Rock Arts Program; The Master Teacher



SPLIT ROCK
arts program

Duluth, Minnesota

The Split Rock Arts Program is a summer series of intensive, residential week-long workshops in the visual and literary arts and in the nature and applications of creativity. Workshops are led by outstanding University of Minnesota artists and nationally renowned guest artists who bring their unique gifts and perspectives to the teaching process.

Home base for Split Rock is the University's Duluth campus. Split Rock participants are encouraged to draw upon the spectacular forest and shoreline environment of northeastern Minnesota as they engage in the creative process.

Participants may choose from over 40 workshops held over a six-week season. Some include trips along the North Shore, some offer methods and approaches from other cultures, some combine artmaking with the personal and social concerns of our near and far worlds, and some link creativity to our emotional and spiritual well-being.

Split Rock workshops include:

Writing Essays in the Forest

Nature Photography: Creating the Photographic Essay

Enhancing Creative Potential

Contemporary Quilting: Pieced, Painted, Patterned

Autobiography of the Soul

Writing Children's Picture Books

Creating and Manipulating Fabric Surfaces

The Remembered Earth: A Writing Workshop

Improvisational Beadworking

The Self as the Source of the Story

Contemporary Basketry

Writing the Short Story

Drawing for Pleasure

Close Encounters: Photographing People

An Intensive Poetry Workshop



THE MASTER TEACHER
MASTERS DEGREES AND COURSES
COLLEGE OF EDUCATION
CONTINUING EDUCATION AND EXTENSION

Classroom Teachers—Professional Development and Graduate Study

A new cooperative program of the College of Education and Continuing Education and Extension, "The Master Teacher," provides practicing teachers with new master's degree options and related course work.

Several master's degrees will be available, including the M.Ed. in Leadership that features much of the required coursework off campus at the Capitol View Learning Center in Roseville. These classes also will be broadcast to interactive television classrooms in high schools in Stillwater and Spring Lake Park. The unique delivery system permits teachers to take classes at these remote sites.

Staff in CEE are committed to providing services that will facilitate students' participation in the program and help assure their success. These include:

- Course scheduling that permits completion of the master's degree in three years.
- Convenient late afternoon and evening classes.
- The option of taking required courses at Capitol View or at the interactive remote sites.
- Easy mail registration and centralized support services, such as textbook delivery, through a separate CEE office designated for the Master Teacher program.

For information about degree requirements, call 625-1855

Study Abroad, Research Explorations



Discover Education Beyond Borders—The Global Campus

The opportunity to study abroad provides exciting academic experiences through a variety of programs. Language proficiency, credit toward graduation or in your major or minor, new challenges and cross-cultural exchange are just a few of the exciting benefits. For about the same cost as full-time tuition and room and board at the University, you can spend a quarter studying abroad (not including travel costs). Programs are co-sponsored by academic departments, most include group activities and excursions, and you can easily arrange for more travel on your own. For information about the study abroad opportunities listed below, contact the Global Campus at 625-3379 or stop by 106 Nicholson Hall.

Africa/Middle East

MSID—Kenya
MSID—Morocco
MSID—Senegal

Americas

MSID—Ecuador
MSID—Jamaica
Spanish in Cuernavaca, Mexico
Spanish in Mérida, Venezuela

Asia/Oceania

MSID—India
Chinese in Tianjin, China
Architecture in China/Japan

Europe

German and Austrian Studies in Graz, Austria
French in Montpellier, France
Integrated Semester in Montpellier, France
Academic Year in Montpellier, France
Archaeological Fieldwork in Greece
Art in Greece
Polish in Lublin, Poland
Russian in St. Petersburg, Russia
International Program in Toledo, Spain
Summer Program for Teachers of Spanish in Madrid, Spain
Literature and Theatre in London
Interior Design in Europe
Architecture in Europe

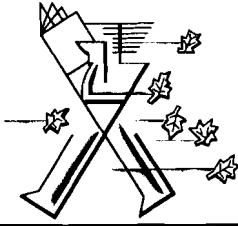
REX puts you in "U" research



Discover a new type of educational experience—one that merges a little work, possibly a little travel, and a lot of learning. That's what Research Explorations (REX) provides. This Extension Classes program matches faculty with people who want to join a research team and work on important projects—in the laboratory, in the field, and in the community. Although REX is a noncredit program, it is usually possible to arrange for directed study to earn credit as part of your REX experience. The principal requirements are curiosity, adaptability, and a willingness to support academic and scientific inquiry. Call 624-5092 for a complete listing of over 50 REX opportunities, such as the following.

Neurobiology of Pain and Opiates
Native American Myth Busting
Agricultural Chemicals and Groundwater Contamination
Women in Science, Engineering, and Mathematics
Origins of an Iron Age City in Bavaria
Relationships in Adoptive Families
Soil Fertility and Crop Productivity

Origin of English Words
Quality of Life After Heart Surgery
Paper Recycling Technology
Attention Deficit Disorder: Determining Test Norms
Food Issue Decision Cases
The German Language in Minnesota
Behavior of High-Strength Concrete
...and many more



Daytime Classes, Seniors Learning

Joint day/Extension classes

In addition to the over 2,000 evening and late afternoon classes listed in this bulletin, many day school classes are open to you as joint day/Extension classes. If daytime classes are convenient for you, the variety and number of courses offered during the day may help you accelerate progress toward a degree.

Check the Credit Course Offerings section of this bulletin for departments that will offer joint day/Extension classes this year (a note appears near the beginning of the department's course listings).

Call 624-2388 about two weeks before mail registration starts each quarter to request a day school Class Schedule and procedures for registration through Extension. (Regularly enrolled day students may not register through Extension for additional day classes.)

Senior Citizen Rates

If you're 62 or older, you can register free for no credit in any regular credit Extension class that does not have class size limits. You may take limited-enrollment classes for no credit on a space-available basis. Classes may be taken for credit for only \$6 a credit (space-available basis for limited-enrollment classes). Course fees and special fees must be paid, however. See the Enrollment Information section of this bulletin.

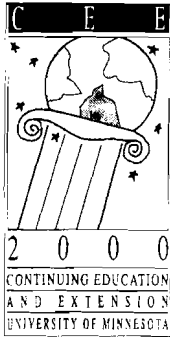
Elderhostel—For Those Over 60

Elderhostel, a living-and-learning program for people 60 and older, will offer week-long sessions at the University again this year. Elderhostel students stay on or off campus in modest facilities, interacting with peers and younger students, and take specially designed college-level, noncredit short courses. Extracurricular and evening activities also are offered. Originally a summer program, Elderhostel sessions now are scheduled throughout the year. Cost to hostellers in 1993 is approximately \$325 for accommodations, meals, and class instruction. Elderhostel is a national program now in its 18th year. The University of Minnesota—Twin Cities is one of many Minnesota colleges participating.

Typical course titles include *City Arts and Architecture*, *Sommerfest at Orchestra Hall*, and *Spring at the Mississippi Headwaters*. Call 626-7311 or 624-7004 for more information about Elderhostel.

The Nolte Scholarship Fund

Supporting Adult Students into the 21st Century



We are heading for a new century, in a rapidly changing world, and for most adults, higher education is no longer a luxury. It is a necessity. Education can enable us to reason clearly, perform more effectively, and adapt to change readily. The University offers thousands of adults the second chance to attain a University education by attending classes part-time in the evenings.

But not every potential student is able to afford an education. For adults in low-paying jobs without tuition reimbursement, or those whose lives have been disrupted by job loss, divorce, or death, the lack of funds for education is a major barrier to improving their lives

Traditional student assistance programs are not geared for adult part-time students. The Nolte Scholarship Fund may be their only recourse. This fund was established in 1986 to help fill the void in financial assistance programs for adult part-time students. Often adult students are balancing the multiple responsibilities of work and family as well as taking classes. Without the modest assistance of the Nolte Fund, they would put their University degrees on hold indefinitely.

As one of our recipients said recently, "The scholarship came at a crucial time for me and provided the means and the motivation I needed to continue my studies."

Requests for help increased threefold last year but only about one in nine needy adult students received assistance. Join the supporters of the Nolte Fund by sending a contribution of \$35, \$50, or whatever you can manage—and please do it today. We can't afford to waste the potential these students represent. Send your gift to:

**The Nolte Fund/U of M Foundation
CEE Development Office, 305 Wesbrook Hall
77 Pleasant Street S.E.
Minneapolis, MN 55455**

Again, in the words of a scholarship recipient, "Thank you for the opportunity you have provided me, and be assured that the contributions made toward these scholarship programs really do make a difference in people's lives!"

Degrees & Certificates

For further information about degrees and certificates, telephone CEE Counseling: 625-2500

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Degrees

Important Admissions Information

All students admitted to a University of Minnesota baccalaureate degree program must meet the preparation standards listed below (see exception).

1. Four years of English (with emphasis on writing, reading, speaking skills, and literary understanding and appreciation)
2. Three years of mathematics (one year each of elementary and intermediate algebra and geometry)
3. Three years of science (including one year each of biological and physical sciences)
4. Two years of a single second language
5. Two years of social studies (including U.S. history)

Also recommended, but not required, are courses in computer skills and the visual and performing arts.

These required preparatory courses can be completed in high school or in Extension Classes or CEE Independent Study courses. If you did not complete these requirements in high school, an adviser in the CEE Counseling Office (625-2500) can help you select the equivalent course at the University which will satisfy the requirement.

Exception: Applicants who graduated from high school before 1987 are exempt from these requirements but are strongly encouraged to complete them to enhance their chances for academic success.

If you have questions about gaining admission to a degree program or the preparation requirements, please contact an adviser in CEE Counseling at 625-2500.

Degree and certificate programs may change or be discontinued. The University will make every reasonable effort to assist admitted students in completing a program.

Several college degrees (two-year and four-year), in approximately 25 major areas, may be earned completely through Extension attendance.

Students seeking a college degree through Extension should consult, early in their planning, with an adviser at the CEE Counseling Office (625-2500). Advisers can explain degree requirements, help in course selection, review transcripts of previous college work, and refer students to college offices and major advisers when appropriate.

Simply taking classes and earning credit does not mean a student has been admitted to a degree program. **Students must apply to the college which grants the degree.** An adviser can explain when and how to apply for admission to a college and help in course selection.

In addition to undergraduate degrees, a master of arts in English (through CEE and the Graduate School) and a master of business taxation (M.B.T.) may be completed through Extension classes, as well as portions of other graduate programs, upon approval by that graduate program. Also, master's degrees in business administration and in industrial relations are available in the evening through the Carlson School of Management. Call 624-0006 (M.B.A.) or 624-5810 (M.A.I.R.) for information.

Colleges and degrees are described in detail on the following pages.

Academic Progress

For students not held to other college, department, or program academic standards, CEE will determine scholastic standing by evaluating satisfactory progress with the following criteria:

Undergraduate Degrees

Completion of two-thirds (66%) of total credits for the review period with grades of A, B, C, or S. Grades of D, N, I, and F are not considered satisfactory. Grades of W, V, or X are not included in this calculation.

The formula for determining satisfactory progress is as follows:

(Total credits grades A, B, C, or S) divided by (Total credits graded A, B, C, D, F, S, N, or I) equals 66%.

Grades in repeated courses and noncredit remedial courses are considered in total credits.

Students who do not meet the criteria for good academic standing will not be eligible to receive financial aid, veterans benefits, and specially funded programs.

Students determined not to be in good academic standing will have an opportunity to appeal their status if there is additional information to present which may change their academic standing.

Students are encouraged to contact an academic progress adviser at 625-2500 for more information and assistance in reviewing options, study skills, and steps that might improve academic standing.

Students in certificate programs who do not register for at least one credit within six consecutive quarters will be withdrawn from their certificate program.

Undergraduate degrees

College of Liberal Arts

Bachelor of Arts (B.A.)

The Bachelor of Arts degree from the College of Liberal Arts can be earned in several major fields through Continuing Education and Extension. Some requirements of the degree program may be met with credits transferred from other accredited colleges and universities. Students wishing to earn the B.A. degree through Continuing Education and Extension should talk with an adviser from CEE Counseling (625-2500) as soon as the decision has been reached.

Candidates for the B.A. degree must complete 180 credits acceptable to CLA (a minimum of 45 credits graded A, B, or C in University of Minnesota CLA courses, 72 of them in 3000- and 5000-level courses). A maximum of 12 credits of D may be applied toward the 180-credit requirement. Students must also satisfy the upper level composition requirement, second language, world studies, U.S. cultural pluralism, and groups A, B, C, and D (listed below). Finally, B.A. candidates must complete a major sequence in the field selected and complete at least 28 credits in 3000- or 5000-level courses from units outside their major

department (interdepartmental majors are exempt from this requirement).

Most students try to meet the Writing Practice requirement, second language, and many of their general education requirements in their first 90 credits, leaving the last half of their programs free for work in their major field and electives. Although it is usually desirable to meet these requirements early, it is not necessary to complete them before applying for admission to a major program. Sophomores (39 or more credits) in good standing may apply for admission to majors.

The following majors currently can be completed in Extension Classes:

American Studies

Art

Art History

Child Psychology

Computer Science

Economics

English

History

Individualized Study Degree Program (B.I.S.)

Individually Designed Interdepartmental

Major (IDIM)

Philosophy

Political Science

Psychology

Sociology (B.A. and B.S.)

Speech-Communication

Majors in other departments—Anthropology, Biology, and Mathematics—can be nearly completed through Extension Classes. A few courses must be taken in day classes (the departments concerned sometimes permit substitution).

Students also may choose to complete a minor. A minor is an approved concentration of 15 to 25 3000- and 5000-level credits in a single department or program. Approved minors are listed in the departmental entries in the CLA bulletin. For additional information, call CEE Counseling, 625-2500.

The minors that can be completed in Extension Classes are:

Art

Child Psychology

Computer Science

Dutch

Economics

English

History

Mathematics

Philosophy

Political Science

Psychology

Sociology

Spanish

Speech-Communication

Women's Studies

Condensed descriptions of major requirements for these degrees are given with course listings under department headings in this bulletin. Each major's departmental office has complete descriptions of their

major and minor requirements. The departments also have advisers to advise you in your major.

A copy of the 1992-94 CLA Bulletin is essential to the CLA degree candidate. It can be obtained by calling Admissions, 625-2008. In addition, a copy of "Pursuing a Bachelor's Degree through Continuing Education and Extension" should be obtained from CEE Counseling, 314 Nolte Center, 625-2500.

Changes in attendance and graduation plans

Admitted CLA students must submit to their college advising office a "leave of absence and noncontinuation form" if they do not plan to enroll in an upcoming quarter.

Continuing Education and Extension B.A. candidates usually follow the general education requirements in use at the time of their admission to CLA. The current requirements are described below. Transfer students entering fall 1984 or after must also meet these requirements. Students absent from CLA for more than two years, if they have fewer than 75 credits, must complete the graduation requirements in effect at the time they reenter. Those with 75 or more credits at the time of last attendance may elect to satisfy either the former or the current requirements although they are encouraged to complete the current requirements.

For questions regarding leaves of absence or graduation requirements, students are encouraged to contact their CLA advising office or CEE Counseling at 625-2500.

General Education requirements

Note: Transfer students who have completed an Associate of Arts (A.A.) degree in 1986 or thereafter from a Minnesota community college have completed Writing Practice and Groups A, B, C, and D automatically. Second language, World Studies and Cultural Pluralism may still be required, depending on the type of major or Bachelor's degree sought. If you completed an A.A. before 1986 or have further questions, contact an adviser at 625-2500.

English Composition Requirement

Writing Practice requirement or exemption and 3000-level writing course designated by the major department.

Second Language Requirement

The study of a second language is considered essential for a liberal education. The College of Liberal Arts expects students to begin second language study in high school. Knowledge of a second language gained before entering CLA may be used to meet part or all

of the language requirement. Students who are unsure about their level of proficiency may consult a language department or a college office adviser for placement assistance. Normally, one to two years of high school study equals one quarter of college study. Students may repeat language study completed in high school, but it is to their advantage to start their college work at as high a level as possible. International students whose primary language is not English are exempted from the requirement. They may not earn credit for skills in their primary language.

Graduation requirement: The graduation requirement for the B.A., B.I.S., and B.F.A. degrees requires students to demonstrate proficiency usually attained after the first six quarters of college study in one language by passing a graduation proficiency examination that tests reading, writing, listening, and speaking skills.

For students who entered CLA prior to fall 1988, the graduation requirement for the B.I.S. is different. Please contact your B.I.S. adviser at 624-8006.

Preparation requirement: All entering first-year students are expected to meet the University's 1991 second language entrance requirement (two years of high school language instruction). Transfer students with 39 or more credits must meet the entrance standard beginning fall 1993.

All B.A., B.F.A., and B.I.S. students who register for French, German, or Spanish courses beyond the entrance requirement, must pass the appropriate entrance proficiency examination.

Students who meet the entrance standard may continue their study at higher levels in the same language or may begin study in another language.

Study abroad programs through the Global Campus include courses that may fulfill second language requirements. For information, call (612) 625-3379.

General Education requirements

At least 48 credits in four groups, distributed as follows:

Group A—Language, Logic, Mathematics, and the Study of Argument: 8-10 credits (normally 2 courses, at least one a "formal language")

Group B—Physical and Biological Universe: 12-15 credits (normally 3 courses, at least two "foundation" courses and one with approved 2-hour laboratory)

Group C—The Individual and Society: 16-20 credits (normally 4 courses—with at least one from each of the following three sub-areas): (1) Individual and Institutional Behavior; (2) The Historical Perspective; (3) Social and Philosophical Analysis

Group D—Literary and Artistic Expression: 12-15 credits (normally 3 courses)

Undergraduate Degrees

World Studies requirement

In order for students to transcend the boundaries set by major European and North American educational traditions, students studying for a bachelor of arts or B.I.S. degree are asked to examine cultures substantially different from their own. Students must take at least two courses (8 to 10 credits) dealing with the cultures of Asia, Africa, Latin America, or with traditional American Indian cultures. These courses also may be used to satisfy other College of Liberal Arts requirements. A list of approved courses is found in Section IV of the 1992-94 CLA bulletin. A list of Extension classes meeting this requirement can be obtained by calling CEE Counseling, 625-2500.

Study abroad programs through the Global Campus include courses that may fulfill world studies requirements. For information, call (612) 625-3379.

U.S. Cultural Pluralism requirement

The CLA U.S. Cultural Pluralism requirement emerged from an acknowledgement of the importance of the importance of studying diverse cultures, in particular, African-American, American Indian, Asian-American, and Chicano cultures. In order to acquire a greater appreciation for cultural diversity in the United States, B.A. and B.I.S. degree students are required to complete at least two courses (8-10 credits) with a primary focus on issues of social and cultural diversity, with special attention to issues of race and ethnicity. A list of approved courses that satisfy this requirement appears in section IV of the 1992-94 CLA bulletin, including the Spring 1993 CLA Bulletin supplement. There is no restriction on the use of these courses to satisfy any other requirement. This graduation requirement applies to all students who entered CLA in fall 1986 or later and who have taken no previous college work prior to that date. Students who entered CLA between fall 1986 and second summer session 1990 and who completed at least one college credit before fall 1986 are exempt from the requirement. This requirement applied to all students entering CLA fall 1990 and thereafter.

Special notes on groups A - D:

1. A maximum of 12 credits from any one department may be used to meet group distribution requirements in Groups A-D, even though courses from some departments may be used in different groups. No course may be used in two groups.
2. Courses used for English composition and for language requirements may not be used for group distribution requirements.
3. The College will offer opportunities to fulfill by

examination any distribution requirement except the Group B laboratory requirement. (The CLEP subject examinations may be used for partial fulfillment.) Extension students may call CEE Counseling (625-2500) for information.

4. Honors courses or sections may be substituted for regular courses or sections (unless otherwise specified).
5. Courses approved for the world studies or U.S. cultural pluralism requirements, which are also approved for a group distribution requirement may be used to fulfill both the world studies or U.S. cultural pluralism requirements and the relevant group distribution requirement.
6. At least one Group B course must include an approved laboratory and at least two must be from the Group B basic foundation courses offered through Extension and shown on the CLA list of courses that meet group distribution requirements.
7. At least one Group A course must deal specifically with a formal language or a formal symbolic system.
8. Extension students may call 625-2500 for a copy of CLA courses meeting group distribution requirements offered through Extension or Independent Study.

Bachelor of Fine Arts (B.F.A.)

The Department of Art and the Dance Program offer the Bachelor of Fine Arts to students who demonstrate superior professional promise. They are "performance" degrees; students must apply through the departments to be accepted into the programs. Application involves the presentation of a portfolio or an audition. Standard CLA requirements are modified somewhat for students in the degree programs. B.F.A. students must complete the second language requirement. Students should contact the department concerned for details or call CEE Counseling, 625-2500. This degree is not available entirely through Extension.

Bachelor of Music (B.M.)

The School of Music offers the B.M. degree for students who demonstrate superior professional promise in the areas of performance, composition and theory, jazz studies, music education, and music therapy. Students must apply through the department to be accepted into the program. Students should contact the department concerned for details or call CEE Counseling, 625-2500. This degree is not available entirely through Extension.

Bachelor of Science (B.S.)

The Bachelor of Science degree is offered in six areas: child psychology, speech and hearing science, economics, geography, sociology, and urban studies. Its requirements are more concentrated than those of the B.A. program. Usually, no second language, world studies, and cultural pluralism courses are required for the B.S., although there are departmental exceptions (e.g. geography). Some of these majors are not entirely available through Extension.

For further information, call CEE Counseling, 625-2500.

Bachelor of Individualized Study (B.I.S.)

The Bachelor of Individualized Studies degree enables students to design an individualized program of study based on their personal academic objectives. Program proposals must define three areas of concentration, one of which may be outside CLA (maximum of 40 non-CLA credits). Proposals must be planned with a B.I.S. adviser and approved by CLA faculty advisers. CLA general education requirements are the same as for the B.A. degree. For further information about the B.I.S. degree or the Individually Designed Interdepartmental Major for the B.A. degree, call CEE Counseling, 625-2500, or CLA Individualized Degree Programs, 624-8006.

College of Liberal Arts Honors Program

Continuing Education and Extension students may work toward graduating with the honors designations *cum laude*, *magna cum laude*, or *summa cum laude* through the College of Liberal Arts Honors Program. Students who are earning 50 percent A's in all of their University of Minnesota credits may be eligible to enter the Honors Program. Honors advisers will work with CEE students to help them develop appropriate honors courses to meet honors graduation requirements. Each year several Extension students graduate with honors. Students interested in working toward honors graduation should call the CLA Honors Program, 624-5522, and make arrangements to talk with an adviser.

Dean's List

The College of Liberal Arts Dean's List is the college's method of recognizing students' superior academic performance. About 10 percent of CLA students qualify for the list each quarter. It has two divisions. For the "all A" list (usually about four percent of CLA students qualify), students must earn 12 credits of A and all other credits with A or S grades. For the "two-thirds A" list, they must complete 12 credits (at least

eight credits on A-F grading) with A grades for two-thirds of their A-F credits and with B or S grades for all other credits.

An official letter verifying that a student in a combined CEE-CLA degree program has achieved the Dean's List may be requested in 106 Johnston Hall. Students also may request that this information be sent at no charge to their hometown newspapers.

Carlson School of Management

Bachelor of Science in Business (B.S.B.)

The B.S.B. degree may be earned through Continuing Education and Extension. Admission to the program is competitive, and students wishing to complete the B.S.B. degree through Extension should talk with an adviser in CEE Counseling (625-2500) as soon as they have made this decision.

Candidates for the degree complete a minimum of 180 credits, part of which (upon evaluation) may be transferred from other accredited colleges or universities. The first 90 credits involve the completion of certain pre-management requirements through Extension courses or while registered in the College of Liberal Arts of the University of Minnesota. Students planning to complete pre-management work over a longer period of time, such as five years, are cautioned that requirements for admission to the Carlson School of Management (CSOM) are subject to change. *Students are responsible for consulting an adviser annually regarding pre-management and admission requirements.*

Change in grading policy—The Carlson School of Management uses a plus/minus grading system for all CSOM classes. For more information, contact an adviser at 624-3313.

Upon completion of the pre-management program, students interested in a business degree must make formal application to the school. *A minimum of 40 credits of upper division Carlson School of Management course work (3000-level and 5000-level courses offered by departments in the school) must be completed after admission to the Carlson School.*

Credits earned at universities outside the United States, armed forces college credits, or credits earned through special examination may be accepted at the discretion of the Carlson School of Management staff. Contact a Carlson School of Management adviser at 624-3313 to discuss acceptability of such credits.

All Extension students admitted to the B.S.B. degree program are responsible for information in the bulletin of the Carlson School of Management, the quarterly *Undergraduate Update*, the current Pre-Man-

Undergraduate Degrees

agement and Upper Division Planning Sheet to that bulletin, and the Extension Classes bulletin.

An official college transcript is created for Extension B.S.B. students at the time of admission.

Application deadlines—Fall Quarter, June 1. Spring quarter, January 15

Second Language Requirement—If you graduated from high school after June 1986 and you are admitted to the CSOM fall of 1993 or later, you must have completed two high school years or three college quarters of the same second language prior to admission to the CSOM. Students who graduated high school June 1986 or earlier are exempt from the second language requirement.

The Carlson School requires the following lower division requirements for admission into the B.S.B. program:

Management-Related "Tool" courses (A/F grading required)

Introduction to Financial Reporting (Acct 1050 or equivalent)

Microeconomics (Econ 1101 or equivalent)

Macroeconomics (Econ 1102 or equivalent)

Information and Decision Sciences (IDSc 1010 or equivalent)

Operations and Management Sciences (OMS 1020 or equivalent statistics course)

Calculus (Math 1142 or 1251 or equivalent)

Other lower division major requirements

General Psychology (Psy 1001 or equivalent; A/F grading required)

One symbolic systems course chosen from the following list: CSci 3101, 3102, 3104, 3113; Engl 3851; Ling 3001, 3111, 5401, 5402; Math 1131, 1252 (formerly 1221); Phil 1001. (A/F grading required)

One international/global social science course (A/F or S/N grading)

Additional University of Minnesota liberal education requirements

Group A: Writing Practice (Comp 1011 or equivalent; A/F grading required)

Group B: Any two science courses, one with laboratory (A/F or S/N grading)

Group C: Any two social science courses not listed above (A/F or S/N grading)

Group D: Any two literary or artistic expression courses (A/F or S/N grading)

A list of all the Extension and Independent Study courses that fit in groups, A,B,C, and D is available at 314 Nolte Center or by calling 625-2500.

Electives (A/F or S/N grading)

In addition, applicants to the Carlson School of Management must have 90 total credits by the time of admission. Numerous University of Minnesota courses can be used toward elective credit in the B.S.B. Many students use second languages as their electives. Please contact Undergraduate Studies at 624-3313 or CEE Counseling at 625-2500 to determine if a course you're interested in would count for general elective credit in the Carlson School.

General admission requirements for all students applying to the Carlson School of Management

Because of resource constraints, the Carlson School of Management establishes enrollment limits. Although grade-point averages (as described below) are an important determinant of admission, applicants are required to provide additional information about their background and achievements to allow a broader view of their qualifications for admission.

To be considered for admission, the following are required:

1. Course work completed or in progress to total 90 credits by the time of admission.
2. Completion of the following "tool" courses on an A-F basis by the time of enrollment: Acct 1050 (1024/1025), Econ 1101 and 1102, IDSc 1010, OMS 1020, and Math 1142 or 1251. Although one or two tool courses may be in progress at the time of application, all else being equal, preference is given to students who have completed all the tool courses. (Note: If you have taken DSci 1050, contact an Extension adviser, 625-2500, about this requirement.)
3. Completion of all but five pre-management courses by the time of application. Any of the tool courses in progress at the time of application are included in this total.
4. Minimum overall grade-point average in all transferable and tool credits of 2.80. A course taken fall 1992 or later in which a D+, D, D-, was earned may be repeated once. Although the credits will be counted once, the original and second grades will be averaged in determining the grade-point average for admission to the CSOM.

(Credits of N earned fall quarter 1987 and later and all grades of F count in the grade-point average used for admission.)

As space permits, students with strong credentials (e.g., significant leadership experience, particularly rigorous course work) but slightly lower grade-point averages may be considered for admission.

5. Equivalent courses taken at other institutions (upon evaluation) may be substituted for required University courses.

Requirements for graduation for students admitted to the Carlson School of Management fall 1992 or later:

Note: Students admitted to the Carlson School of Management prior to fall 1989 are responsible for the requirements published in the Management bulletin current at the time of their admission. Students previously admitted to the CSOM who have not taken courses for one year or longer should consult with a Carlson School adviser at 624-3313 before continuing.

1. Complete a minimum of 180 quarter credits of which a minimum of 45 credits must be taken at the University of Minnesota.
2. Complete a minimum of 72 credits in business and economics course work and at least 72 credits in non-business and economics course work.
3. Complete 40 credits of upper division business courses after official admission to the Carlson School of Management. (Upper division business courses are those 3000-level and 5000-level courses offered by departments in the school and listed in the Carlson School of Management bulletin.)
4. Have a minimum grade average of C (2.00) in all work taken after admission to the Carlson School of Management and in all upper division business administration courses.
5. Complete upper division course requirements for the appropriate degree program as listed below (either the general management program or accounting program). Pre-management course requirements listed above also must be completed and cannot be used to satisfy the upper division requirements listed below. Accounting students must complete 50 percent of their total number of accounting classes (usually 5 courses minimum) at the University of Minnesota.
6. A minimum of 135 transferable credits completed upon graduation must be on the A-F grading system.

Grade-Point Average—Each credit of N and F earned after admission to the Carlson School of Management is assigned 0 grade points and will be included in the grade-point average. No degree credit is granted for a grade of N or F.

Honors—Students with the appropriate grade-point average may graduate with distinction or with high distinction. For information, call the Carlson School of Management, 624-3313.

Bachelor of Science in Business—Requirements Common to Both Accounting and General Management Programs

Note: Students who take a course without fulfilling a prerequisite may not take the prerequisite course for credit later except by permission from the Undergraduate Studies Office.

- I. **28 credits of Course Courses** (A-F grading required)
 - Acct 3001, Introduction to Management Accounting
 - Mgmt 3001, Fundamentals of Management
 - BFin 3000, Finance Fundamentals
 - IDSc 3030, Information Systems and Information Management (prerequisites are IDSc 1010 and OMS 1020)
 - Mktg 3000, Principles of Marketing
 - OMS 3000, Introduction to Operations Management
 - IR 3002, Personnel and Industrial Relations
- II. **4-credit Economics course** selected from the following (A-F grading required)
 - Econ 3101, Microeconomic Theory
 - Econ 3102, Macroeconomic Theory
 - Econ 3105, Managerial Economics
 - Econ 3701, Money and Banking
- III. **5-credit Senior Policy Course** (A-F grading required) Prerequisite completion or concurrent registration in core courses.
 - Mgmt 3004, Business Policy: Strategy Formulation and Implementation
- IV. **12 credits Communications course** (A-F grading required)
 - Comp 3022, Critical Reading and Writing for Management
 - Comp 3032, Preprofessional Writing for Business

One course from the following:

 - Rhet 3254, Advanced Public Speaking
 - Rhet 3266, Discussion Methods
 - Spch 1101, Fundamentals of Speech Communication
 - Spch 3111, Leadership Communication
 - Spch 3411, Small Group Communication Processes
 - Spch 3605, Public Speaking (instructor approval required)
 - Spch 5422, Interviewing and Communication
 - Th 3803, Topics: Platform Performance

Undergraduate Degrees

V. **4-credit International course** (A-F grading required). One course selected from a prescribed list of courses in the following areas: AgEc, BGS, Econ, FSMg, Geog, IntR, Pol, PA. Check with an adviser for courses that satisfy this requirement.

Bachelor of Science in Business—General Management Program Additional Major Requirements

I. **Elective credit, to reach 180**, usually selected from the College of Agriculture, Institute of Technology, the College of Liberal Arts, or the Carlson School of Management

II. **20-24 credits in Area of Emphasis** (A-F grading required for all courses comprising the area of emphasis—listed below)

Note—Students pursuing more than one area of emphasis should expect to spend additional time completing their degree in the Carlson School of Management.

Actuarial Science

Ins 5100, Risk Management and Insurance
Ins 5230/Math 5057, Life Contingencies I
Ins 5231/Math 5058, Life Contingencies II
Math 5473, Analysis of Numerical Methods
Math 5056, Theory of Interest

Banking

BFin 3601, Bank Financial Management (spring quarter)
BFin 3602, Regulation of Depository Institutions (fall quarter)
BFin 3603, Selected Problems in Banking Management (winter quarter)

Two of the following:

Acct 3101, Intermediate Financial Reporting
BFin 3100, Financial Management
BFin 3300, Investment Management and Financial Markets

Finance

BFin 3100, Financial Management
BFin 3300, Investment Management and Financial Markets
Ins 5100, Risk Management and Insurance
Acct 3101, Intermediate Financial Reporting
Acct 3201, Intermediate Management Accounting

Small Business Management and Entrepreneurship

Mgmt 3008, Entrepreneurship and the Smaller Enterprise
Mgmt 3002, Psychology in Management
One of the following:

Mgmt 5101, Advanced Topics: Entrepreneurship Project

Mgmt 5101, Advanced Topics: Small Business Management

(Only these topics in Mgmt 5101 will satisfy this requirement)

Two of the following:

Acct 3101, Intermediate Financial Reporting
BFin 3100, Financial Management
Mktg 3010, Buyer Behavior and Marketing Analysis
OMS 3041, Project Management

Marketing

Mktg 3010, Buyer Behavior and Marketing Analysis

Mktg 3020, Marketing Operations Management

One of the following:

Mktg 3030, Sales and Distribution Management
Mktg 3050, Marketing Communications
Mktg 3065, Retail Management
Mktg 3090, Marketing Topics

Two additional upper division Carlson School of Management courses other than additional marketing courses

Logistics Management

LM 3000, Introduction to Logistics Management
LM 5010, Topics in Logistics Management
LM 5020, Advanced Logistics Management
LM 5030, Principles of Transportation
Two advanced courses selected from BFin, IDSc, Mktg, or OMS.

Operations Management

OMS 3056, Production and Inventory Management

OMS 3059, Quality Management

One of the following:

OMS 3041, Project Management
OMS 5155, Methods for Quality Improvement

Two more 3xxx or 5xxx Carlson School of Management courses. The OMS department recommends two of the following:

LM 3000
LM 5020
Mgmt 3002
Mgmt 3008
IDSc 5102
IR 3007
Acct 3101
Acct 3201

General Management Studies

Two of the following:

- BGS 3004
- BLaw 3058
- OMS 5060
- Ins 5100
- LM 3000
- Mgmt 3002

Three additional courses within the school. These may be selected from the list above. No more than two of these courses may be taken from the same department or functional area.

Self-Designed Emphasis

20 credits of upper division courses with no more than 12 credits in one designator area. Credits may be from other units within the University. Approval of the Director of Undergraduate Studies is required. At least 12 of the 20 credits must be completed after approval.

Bachelor of Science in Business—Accounting Program Additional Major Requirements

For students in the accounting program, the following courses must be completed (in addition to the courses listed above that are common to both the regular and accounting program); A-F grading required.

BLaw 3058, Introduction to Law, and the Law of Contracts and Agency

- Acct 3101, Intermediate Financial Reporting
- Acct 3201, Intermediate Management Accounting
- Acct 5102, Advanced Financial Reporting I
- Acct 5125, Auditing Principles and Procedures
- Acct 5135, Introduction to Taxation

8 credits upper division Accounting Electives; A-F grading required (Acct 3199 and Acct 3299 do not apply)

Institute of Technology (B.S.)

Many credits for a bachelor's degree in Civil Engineering, Computer Science, Electrical Engineering, and Mechanical Engineering can be completed through registration in Extension classes. However, students must be formally admitted in these programs. See separate department sections for more information.

Residency Requirement—A student earning a bachelor's degree must complete 45 credits after admission to the Institute of Technology, and at least 30 of those credits must be completed in the senior year.

Admission—Students planning to complete degrees in the above fields primarily through Extension classes should contact an adviser in the appropriate department at an early date and *must apply for admission to the Institute of Technology after completing lower division requirements*. Contact CEE Counseling at 625-2500 for more information and application forms.

A copy of "Pursuing a Bachelor's Degree in Continuing Education and Extension" can be obtained from the CEE Counseling Office, 314 Nolte Center. For a current Institute of Technology bulletin, call 625-2008.

Honors—Students with the appropriate grade-point average may graduate with "distinction" or "high distinction."

The following are tentative schedules designed to assist students in Civil Engineering, Electrical Engineering and Mechanical Engineering in planning a program of studies leading toward the completion of a certificate or degree program (for Computer Science courses, see the schedule in the *Course Offerings* section). Every effort will be made to adhere to the schedules given here, but they are subject to change whenever necessary. Courses in addition to those listed may also be offered. For specific degree requirements, please consult the most recent Institute of Technology Bulletin.

Civil Engineering

Students must be formally admitted to upper division Civil Engineering in the Institute of Technology. A degree will not be granted based on course completion alone. Contact the CEE Counseling Office at 625-2500 for information.

(See *Institute of Technology Bulletin* for full course descriptions and offerings.)

Electrical Engineering Curriculum Guide

See also the current Institute of Technology bulletin for full course descriptions.

The bachelor of electrical engineering (B.E.E.) requires completion of a minimum of 192 quarter credits. Further information about the B.E.E. program can be obtained by requesting a copy of the Electrical Engineering Curriculum Guide from the Department of Electrical Engineering, 4-178 Electrical Engineering/Computer Science, University of Minnesota, 200 Union Street S.E., Minneapolis, MN 55455; (612) 625-3300.

Undergraduate Degrees

The general requirements listed below apply to students enrolled in the lower division and planning to qualify for the B.E.E. degree.

Students must be formally admitted to upper division Electrical Engineering in the Institute of Technology. A degree will not be granted based on course completion alone. Contact CEE Counseling for information, (612) 625-2500.

Lower Division Electrical Engineering Program

Comp 1011, Writing Practice—5 credits

Math 1251, 1252, 1261, 3251, 3252, 3261 or Math 1211, 1221, 1241, 3311, 3321, 3331, Calculus, Multivariable and Vector Analysis—24-27 credits

Phys 1251-1252-1253, General Physics (with lab) or 1271/1275, 12181/1285, 1291/1295—12-15 credits

Phys 1254 or 3501, Modern Physics—4 credits

Chem 1051, 1052, General Principles of Chemistry—4 credits. (Chem 1004-1005 or Chem 1014 may be substituted for Chem 1051-1052)

CSci 3121, Algorithms and Data Structures I—4 credits

CSci 3322, Algorithms and Data Structures II—5 credits

EE 1000, Introduction to Electrical Engineering—1 credit

EE 1400, Circuits Laboratory—1 credit

EE 3009-3010, Linear Circuits I-II—8 credits

EE 3351-3352, Introduction to Logic Design, Introduction to Microprocessors—8 credits

Liberal education electives

Technical elective (AEM 3036 or ME 3301)—4 credits

CREDIT TOTAL: 88-94

Mechanical Engineering

It is possible to earn all but approximately 24 to 28 credits toward a bachelor's degree in Mechanical Engineering through Extension Classes. The Mechanical Engineering degree can then be completed after a limited amount of day school attendance or through University-Industry Television for Education (UNITE). Depending upon the selection of the coherent elective option, students may need to take more courses in day school.

Students must be formally admitted to upper division Mechanical Engineering in the Institute of Technology. A degree will not be granted based on course completion alone. Contact CEE Counseling for further information (625-2500).

The following information indicates in a general fashion how a program of study leading ultimately to the award of a bachelor's degree in Mechanical Engineering might be approached. The courses listed are required courses which are often offered through Extension. They do not include all requirements for the bachelor's degree in Mechanical Engineering. See the current Institute of Technology Bulletin for full requirements and course descriptions. (Students must satisfy the Institute of Technology admission and residency requirements given at the beginning of this section.)

First year, 20 credits:

Math 1251 (formerly 1211) fall quarter (4 credits).

ME 1025 fall quarter (4 credits).

Math 1252 (formerly 1221) winter quarter (4 credits).

CSci 3101 winter quarter (4 credits).

Math 1261 (formerly 1241) spring quarter (4 credits).

Second year, 24 credits:

ME 3900 or Stat 3091 fall quarter (4 credits).

Math 3261 fall quarter (4 credits).

Phys 1251 or 1271/1275 fall semester (4 credits).

AEM 1015 winter quarter (4 credits).

Phys 1252 or 1281/1285 spring semester (4 credits).

Math 3251 spring quarter (4 credits).

Third year, 21 credits:

Phys 1253 or 1291/1295 fall semester, 4 credits.

AEM 3016 winter quarter, 4 credits.

AEM 3036 spring quarter, spring quarter.

Comp 1011 spring quarter, 5 credits.

Fourth year, 24 credits:

ME 3201 fall quarter, 4 credits.

ME 3301 fall quarter, 4 credits.

ME 3203 winter quarter, 4 credits.

ME 3303 winter quarter, 4 credits.

ME 3205 spring quarter, 4 credits.

ME 5342 spring quarter, 4 credits.

Fifth year, 8 credits:

IEOR 3000 fall quarter, 4 credits.

ME 3701 spring quarter, 2 credits.

ME 3702 spring quarter, 2 credits.

ME 3701 and 3702 meet concurrently.

Day Only, or Infrequent Extension Offerings:

MatS 3400

Senior Laboratory requirement

ME 3020

ME 5254 (Summer Extension)

ME 5260

Chem 1051, 1052 (Substitute Chem 1004 and 1005 or Chem 1014)

EE 3009, 3003/3004

Additional EE

Coherent upper division technical elective program; many courses are scheduled in Extension. See adviser for suitable programs and program approval.

Liberal education courses—27 credits required in addition to Comp 1011 and a senior writing course (36 total). These may be scheduled at any time to maintain a full schedule.

University College (B.A., B.S.)

University College (UC) offers students on all University of Minnesota campuses the opportunity to design an individualized baccalaureate degree program drawing upon courses, faculty, and other learning resources from across the University. Students pursuing one of the two UC program options, The Program for Individualized Learning or the Inter-College Program (ICP), are assisted by academic and faculty advisers in the development and execution of an academic program tailored to meet their specific educational goals. It is recommended that students who are interested in either program attend an informational advising session. Each program holds these small group information sessions every week. Attendance can be scheduled through each program's office.

The Inter-College Program (ICP) allows students to plan and pursue a cross-college academic program suited to individual needs. ICP is appropriate for those students who have clearly defined academic goals and discover they cannot achieve those goals without an inter-college curriculum. A student's ICP plan is drawn up with guidance and approval from academic advisers and designated faculty advisers. The degree program may include two or three areas of concentration, or may integrate courses from two or more colleges into a cohesive theme. Depending on how a student fulfills liberal education requirements, ICP leads to either a bachelor of arts or a bachelor of science degree.

To be considered for admission to ICP, a student must have a 2.00 grade-point average; completed at least 80 credits of college work (minimum of 15 credits from the University of Minnesota and at least 9 credits of upper division work); completed designated prerequisites and/or meet grade-point average requirements for areas with concentration or collegiate grade-point restrictions; and prepared an approved ICP degree plan and goal statement.

Deadlines for submitting applications to ICP vary each year. For more information on application deadlines and to schedule an ICP First Step meeting, call 624-2004 or visit ICP in 107 Armory.

The Program for Individualized Learning serves students with clear educational goals who wish to design and carry out individualized B.A. or B.S. degree programs. Students tend to select the program because they value the freedom to make significant choices about what and how they learn, because they have experiences they can use as foundations for further learning, and because they want to use a variety of educational resources at the University and in the community.

Students are admitted on the basis of evidence that they have the attributes and academic skills needed to pursue a self-directed degree program, e.g., skills in writing, project design, and educational planning. A degree program can incorporate a variety of learning resources, including University classes, independent study courses, and self-designed projects. Knowledge gained from independent learning prior to admission may be applied if it can be demonstrated and evaluated as college-level learning.

Individualized Learning students design their degree programs around a set of standards, called graduation criteria. The criteria combine learning in a major area of study with learning in the liberal arts. Students pursue programs in a wide variety of fields, often studying in many disciplines and creating new and innovative areas of study. Examples of recent degree programs include: performing arts, habitation design, behavioral genetics, American social activism, and Third World development.

For more information about the Program for Individualized Learning, students should read the University College Bulletin and arrange to attend an information session. Call (612) 624-4020 or stop by the office in 107 Armory.

University College Independent Study (UC 3075) is an undergraduate independent study course listing available to students who wish to pursue projects that go beyond the scope of any single department or college of the University. Projects are interdisciplinary in nature or are done in departments that do not have an undergraduate independent study course for nonmajors. Students will be asked to select an appropriate faculty monitor and to complete the UC 3075 Independent Study contract prior to registering. Students may take 3 to 15 credits of UC 3075. Additional information may be obtained from the Inter-College Program Office of University College, 107 Armory, (612) 624-2004.

Undergraduate Degrees

College of Agriculture and College of Human Ecology

Bachelor of Science (B.S.) in Food Science

Although this degree is not available entirely through Extension, many courses in the food science major as well as some general education requirements for this degree are offered through Continuing Education and Extension.

The B.S. in Food Science can be completed in one of two colleges, Agriculture or Human Ecology. Students interested in the bachelor's degree in Food Science should contact the College of Agriculture (624-3045) or the College of Human Ecology (624-1717) and the Department of Food Science and Nutrition (624-1290) for advising.

Students should apply for admission to the College of Agriculture or the College of Human Ecology as soon as they have decided to pursue a degree in Food Science and after completing 39 acceptable credits. Application forms for admission and CEE registration information is available at CEE Counseling, 625-2500.

Graduate degrees

Be sure to read the section on graduate credit, page 38.

Master of Arts (M.A.) in English

The Department of English in cooperation with the Graduate School offers a master of arts degree specifically designed to meet the needs of Continuing Education and Extension students. The degree is in every way equal to the usual day-program degree, but the advising system, class scheduling, and special activities offered recognize that CEE students lead complex lives. This degree is particularly suited to adult students who see their graduate study as a means for professional advancement or personal growth. Typically, M.A. students do not go on to doctoral study.

The M.A. Program: Two Emphases

A student may select between two M.A. emphases, one of them specialized and one focused on more usual topics in language and literary study. Applicants who see themselves primarily as practicing writers may apply for the special emphasis on *Creative and Professional Writing*. Students are admitted to this workshop-based degree primarily on the basis of careful review of their portfolios of writing. The emphasis on *Literary Genre* focuses on issues in

literary study and allows considerable flexibility in designing a course of study. Both emphases have the same basic requirements:

1. **44 credits (11 courses) of course work.** Each emphasis has slightly different course work requirements, but all require 8 credits (2 courses) at the 8000 level, including one seminar, and 8 credits (two courses) in related fields outside of English.
2. **Reading knowledge of one modern or classical language.** A student can meet the requirement in one of three ways: by having completed at least 15 college-level quarter credits in the language with a grade of A (or 20 quarter credits with an average grade of B); by completing one of several special programs of course work designed to develop foreign language skills; or by scoring well on the Graduate School Foreign Language Test (GSFLT) offered through University Counseling Services.
3. **Qualifying examination taken during the course of your studies.** Offered twice a year, in the fall and spring quarters, this four-hour examination asks the student to analyze and interpret two works announced one quarter in advance. A student must pass the examination no later than four years after admission.
4. **A writing project: two or three "Plan B" papers.** Instead of a traditional master's thesis, a student completes three major writing projects (two in the writing emphasis) on topics defined with faculty members.

Both emphases allow the necessary flexibility to plan a course of study from courses scheduled in the evening. Under special circumstances, students may enroll in day school classes as well.

Admission Procedures

General information about admission to the M.A. program can be found in the current *Graduate School Bulletin*. More information and application forms may be obtained from the English Graduate Studies Office in 205 Lind Hall (625-3882).

Requirements: You do not need to have an undergraduate degree in English, but you should have a strong background in literature and related fields with a minimum of 16 credits in English (at least 12 in upper division work).

Admission Criteria: We judge your application on the basis of your previous academic record, Graduate Record Examination scores, proposal for graduate study in CEE, letters of recommendation, and writing sample. No single factor determines acceptance.

How to Apply: The University of Minnesota requires simultaneous application to the Department of English and to the Graduate School. The admission procedure is lengthy. If your file is incomplete, or if your materials are sent to the wrong office, your application cannot be reviewed. Please follow the process described below with care to ensure that all materials arrive by the admission closing dates.

The following materials should arrive at the Graduate School Admissions Office by December 31, 1993 (Graduate School, University of Minnesota, 309 Johnston Hall, 101 Pleasant Street S.E., Minneapolis, MN 55455; telephone 612/625-3014).

1. Completed application for admission. Please indicate that you are applying to the M.A. program through Continuing Education and Extension. Write "CEE" at the top of the application form and in item #13 (Proposed Major Field) on the form. Say which of the emphases you wish: literary genre or writing. Applicants to the program in writing should specify their intended area of specialization (fiction, poetry, or nonfiction).
2. Official transcripts from all colleges or universities attended.
3. Application fee (\$30).
4. Applicants whose native language is not English should submit official scores from the Test of English as a Foreign Language (TOEFL). (An overall TOEFL score of at least 620 is required for admission to this program.) For information about this examination, write to TOEFL, Box 899, Princeton, NJ 08541, U.S.A.

The following materials should arrive at the English Graduate Office by January 10, 1994 (Department of English, University of Minnesota, 205 Lind Hall, 207 Church Street S.E., Minneapolis, MN 55455; telephone 612/625-3882, fax 625-8565).

1. Letters of recommendation from three people who can judge your academic performance and your promise as a graduate student.
2. Official scores from the general test (the aptitude portion) of the Graduate Record Examination (GRE). The departmental code is 2501. Scores from a GRE taken within the last five years are required. For information on registering to take this exam, contact the Educational Testing Service, Box 955, Princeton, NJ 08541, telephone (609) 771-7670; or University Counseling Services, University of Minnesota, 109 Eddy Hall, 192 Pillsbury Drive S.E., Minneapolis, MN 55455, telephone (612) 624-2815, if you live near the University of Minnesota campus; or your local university or college counseling service.

Although the advanced test in literature is not normally required, if your undergraduate transcript is a "narrative transcript," or if it contains "pass/no-credit," "credit," or other ungraded notations for a substantial number of courses taken during your junior or senior year, you should also take the GRE Subject Test in Literature in English and have the score sent to the Department of English graduate office. GRE scores are not required of students whose native language is not English, although a TOEFL score is.

3. A sample of expository writing, usually a paper written for a literature course. If you are applying to the writing program, you submit a substantial sample of your creative work (fiction, poetry, or nonfiction) and a description of your writing background.
4. A proposal, perhaps a letter, in which you write about yourself as a reader, writer, and scholar—saying if you can why you chose graduate study in English through Continuing Education and Extension and how it might fit in your life.

Although the Graduate School may consider your application complete and notify you accordingly once they have received your application form, transcripts, and fees, the English department cannot begin to review your application until all the additional materials described above have been received. The English department cannot notify you when your application is complete or when materials are missing. Contact the English Graduate Office (612/625-3882) to find out the status of your application file. Upon review of your completed file, the department will forward its recommendation to the Graduate School. The Graduate School, which is the official admitting unit, makes the final decision.

Application Deadlines: All application materials must be in the English Graduate Office by January 10, including both the materials sent directly to that office and the materials sent to the Graduate School. You must therefore be sure to send your application, transcripts, fee, and TOEFL Score (international students only) to the Graduate School at least two weeks in advance of the January 10 deadline. While January 10 is the application deadline for all programs in the department, applications to the *Program in Creative and Professional Writing* will be considered through March 15 if space is available.

Master of Business Taxation (M.B.T.)

This program is designed to help students acquire a conceptual understanding of taxation and to develop technical competence in the practical application of the rules of taxation in business and personal decision making. The program is offered only in the evening through Continuing Education and Extension. It is designed to accommodate the nontraditional student who is employed during the day and enrolled in the program on a part-time basis during the evening. Students enrolled part time can expect to complete the program in approximately two to three years. Students enrolled full time can complete the program in a shorter period.

Requirements for the Master of Business Taxation Degree

Degree requirements—A student is required to have gained, through course work, a common body of knowledge in the various areas of business. When the appropriate course work is lacking, a student must make up the deficiencies. These courses may be taken after admission.

A student must complete 46 credits, including 16 credits in business, economics, and accounting; 14 credits in the fundamentals of tax, tax research, tax procedures, and corporate tax; and 16 credits of elective tax courses. A student must maintain a 3.00 grade-point average. The final examination is oral.

Special admission requirements—Results of the Graduate Management Admissions Test (GMAT) or the Law School Admission Test (LSAT) are required. Applicants will be considered for admission during fall, winter, spring, or summer terms.

For further information, contact Frederick R. Jacobs, Director of Graduate Studies, Business Taxation, 645 Management/Economics Building, University of Minnesota, 271 19th Ave. S., Minneapolis, MN 55455; telephone (612) 624-7511.

Graduate Minor Program in Gerontology

A graduate minor program in gerontology may be pursued at both the Ph.D. and the M.A./M.S. levels. The program for an individual student is developed in consultation between the student and the Director of Graduate Studies designated by the All-University Council on Aging.

Requirements for the Graduate Minor in Gerontology

Degree requirements—The course "Multidisciplinary Perspectives on Aging" (4 credits) is re-

quired for both the doctoral and master's minor programs. This course focuses on a multidisciplinary introduction to aging and the aging process. The course is cross-listed in seven departments or colleges of the University.

The master's degree minor program requires a minimum of nine graduate-level quarter credits including the "Multidisciplinary Perspectives on Aging" course (4 credits). The remaining five or more credits would be taken from the designated course list, available from the All-University Council on Aging, in two of the following four areas: biological or medical sciences; psychological, behavioral, or social sciences; humanities or fine arts; public policy, practice, economics, politics, or law.

The doctoral degree minor program requires a minimum of 18 graduate-level quarter credits including the "Multidisciplinary Perspectives on Aging" course (4 credits). The remaining 14 or more credits would be taken in courses selected from the designated course list available from the All-University Council on Aging. The program must include at least two courses in two or more of the following four areas: biological or medical sciences; psychological, behavioral, or social sciences; humanities or fine arts; public policy, practice, economics, politics, or law.

Admission requirements—Graduate students electing the Ph.D. or M.A./M.S. minor program in gerontology must have been accepted by the Graduate School and the major program in which they are enrolled. Admission to the program will be contingent upon enrollment in good standing within a recognized Ph.D. or M.A./M.S. degree granting program at the University of Minnesota.

For further information, call the All-University Council on Aging at (612) 625-9099 for the current designated course list and to meet with the Director of Graduate Studies. Or write Director of Graduate Studies, Graduate Minor Program in Gerontology, All-University Council on Aging, University of Minnesota, 330 Humphrey Center, 301 19th Ave. S., Minneapolis, MN 55455-0421.

Master of Education (M.Ed.)

Master of Education degrees offered by the College of Education are available through Extension Classes. Programs currently are offered in second languages and cultures education and in leadership.

These 45-credit master's degree programs are intended for licensed teachers and other educational professionals who wish to enhance their knowledge and skills for career advancement and more effective teaching.

Call (612) 626-7196 or (612) 625-6501 for information about these and other graduate programs in education.

Certificates

Degree and certificate programs may change or be discontinued. The University will make every reasonable effort to assist admitted students in completing a program.

Students not certain they can devote the time necessary to earn a college degree may wish to consider a certificate program. Some certificate programs are regarded by business and industry as valuable professional and technical preparation for employment and promotion. Students are encouraged to consult with employers regarding the usefulness of the certificate in seeking new employment or possible promotional opportunities. With careful planning, some certificates can be, if the student wishes, a stepping stone to a degree. Work on a certificate may be done in Extension Classes, Extension Independent Study, Continuing Education for Women courses, day school, summer session, or any combination of these. (Certificate programs marked with **(IS)** are available entirely through Extension Independent Study.)

A wide variety of certificate programs is administered by Continuing Education and Extension (CEE). The curricula are described in detail in the following pages. Certificate programs are organized at the collegiate level; students entering them should have adequate educational preparation or other experience to work effectively with college materials. Certificate programs consist of degree credit courses or a combination of degree and certificate credit courses. Certificate credit courses are college level in quality, and represent an accelerated and specialized approach to the subject matter. Certificate credit classes (course number begins with a "0" or is followed by a C, as in 0120C) are rarely transferable to a degree program.

A student may transfer credit from other accredited institutions of higher education, although a minimum of 25 percent of credits required for any certificate must be earned through the University of Minnesota—Twin Cities campus. The residency requirement cannot be met by repeating courses at the University of Minnesota which have already been completed successfully at another institution. Courses need not be taken in order, except as prerequisites make it necessary.

Certificate requirements may be modified from time to time. There is no time limit on the use of credits. Students may not enroll in more than three certificate programs at one time.

Students interested in taking courses toward certificate programs on the S-N grading system should first consult an adviser at 314 Nolte Center, (612) 625-2500.

Application

Students can obtain a copy of "CEE Certificate Program Information" with an application form by contacting CEE Counseling, (612) 625-2500, 314 Nolte Center. A nonrefundable \$20 application fee (VISA/Mastercard available) will be required with all applications. Students are urged to consult with an adviser early in their program, and before completing an application for admission, regarding application time, admissibility to a certificate, residency requirements, and specific admission information for each certificate.

Admission criteria vary among certificate programs. Admission decisions are based on previous college performance (better than a C average is required), educational objectives, and patterns of course work completed. Students will be asked to include a written statement outlining how the certificate program help to meet their educational goals. Students will be notified of admission status by mail approximately three weeks after all transcripts and application materials are received. If admitted, students will receive a written evaluation describing how previous college course work applies to their certificate program.

Completion

A student nearing completion of the required work and expecting to receive a certificate must file a Certificate Completion Form at the *beginning* of the term in which the certificate is to be awarded. A nonrefundable \$20 certificate fee (VISA/Mastercard available) will be required at the time the Certificate Completion Form is filed. Certificate application forms can be obtained from CEE Counseling, 314 Nolte Center, (612) 625-2500.

Upon completion of a specified program with at least a C (2.00) overall average (including a 2.00 grade-point average in University of Minnesota courses), the student is awarded a certificate. Certificates are awarded by CEE (not by individual University of Minnesota colleges). All certificates are dated and awarded as of each quarter of the academic year.

Academic Progress

For students not held to other college, department, or program academic standards, CEE will determine scholastic standing by evaluating satisfactory progress with the following criteria:

Completion of two-thirds (66%) of total credits for the review period with grades of A, B, C, or S. Grades of D, N, I, and F are not considered satisfactory. Grades of W, V, or X are not included in this calculation.

Certificates

The formula for determining satisfactory progress is as follows: (Total credits grades A,B,C, or S) *divided by* (Total credits graded A,B,C,D,F,S,N, or I) *equals* 66%.

Grades in repeated courses and noncredit remedial courses are considered in total credits.

Students who do not meet the criteria for good academic standing will not be eligible to receive financial aid, veterans benefits, and specially funded programs.

Students determined not to be in good academic standing will have an opportunity to appeal their status if there is additional information to present which may change their academic standing.

Students are encouraged to contact an academic progress adviser at 625-2500 for more information and assistance in reviewing options, study skills, and steps that might improve academic standing.

Students in certificate programs who do not register for at least one credit within six consecutive quarters will be withdrawn from their certificate program.

Continuing Education and Extension Honors

All CEE Certificates may be earned with honors. A student earning a 3.00 to 3.49 grade-point average in University of Minnesota credits within the certificate will be awarded a certificate "with high distinction." At least 60 percent of the requirements for a certificate with honors must be earned at the University of Minnesota and must be taken on the A-F grading system.

Colleges at the University of Minnesota retain the right to determine honors requirements for a degree; therefore, earning a certificate with honors does not automatically gain a student entry into a college's honors program.

For further information concerning the Honors Program for certificate students, call CEE Counseling, 625-2500.

Guide to certificates offered through Continuing Education and Extension

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Arts, liberal, page 486
Behavior analyst, page 485
Business administration, page 488
Cardiovascular perfusion technology, page 485
Child Abuse Prevention Studies (CAPS), page 485
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Alcohol and Drug Counseling Education (ADCEP) certificate (51 credits)

Courses for this program are offered through Continuing Education and Extension in cooperation with the Department of Family Social Science, College of Human Ecology. Requirements for the certificate include completion of 10 courses, plus 1000 hours of supervised internship. In addition, a two-quarter commitment is required of all interns to participate in Personal Growth, Ethics, and Counseling Supervision. Students may apply earned credits toward a baccalaureate degree through the Inter-College Program. In addition, qualified students may apply earned graduate credits toward an M.Ed. degree and possibly toward other master's or doctoral degrees.

The 10 content/clinical courses are designed to prepare individuals to work with clients experiencing a range of problems associated with chemical use/abuse. While planned specifically for persons interested in careers in the field of alcohol and drug use problems, the content courses are also offered as continuing education for educators, clergy, nurses, social workers, psychologists, and other professional persons.

The supervised internship is provided for interns who have successfully completed the content/clinical courses. Students may specialize in one of four tracks

for the internship: prevention, assessment, primary care, and aftercare. Individual internship placement is made on the basis of an evaluation of the student's previous experience and relevance to the student's vocational goals. Successful completion of the internship leads to the certificate.

Requirements

- FSoS 3026 Assessment of Alcohol and Drug Abuse Problems
 - FSoS 3027 Current Issues and Pharmacology of Alcohol and Drug Abuse
 - FSoS 3028 Treatment of Alcohol and Drug Use Problems
 - FSoS 3029 Counseling Skills Practicum I
 - FSoS 3030 Counseling Skills Practicum II
 - FSoS 3031 Counseling Skills Practicum III
 - FSoS 3032 Chemical Abuse and the Family: An Overview
 - FSoS 3035 Clinical Internship in Chemical Use Problems
 - FSoS 3037 Group Therapy: Theory and Practice
- Plus an elective course (3000- or 5000-level for 3 credits)

Any of the above courses may be taken for either undergraduate or graduate credit. No credits may be transferred to this program from other institutions, except for possible experience substitution on the internship.

Persons wishing to apply for admission to the program should write to Dr. Philip Colgan, Alcohol and Drug Counseling Education Program, Department of Family Social Science, 388 McNeal Hall, 1985 Buford Ave., University of Minnesota, St. Paul, MN 55108; telephone 625-3778 (FAX 625-4227). **Applications are accepted on a continuing basis.**

Behavior Analyst in Community Environments certificate (30-33 credits)

A moratorium has been placed on further admissions to this certificate. Contact an adviser in CEE Counseling, (612) 625-2500 for more information.

Cardiovascular Perfusion Technology certificate (Garamella, Lynch, Jensen-CRC-Perfusion Training Program) (50 credits)

The Cardiovascular Perfusion Technology Certificate program has been developed by the University of Minnesota Heart and Lung Institute in cooperation with Continuing Education and Extension and the Cardiac Research Committee (CRC). The CRC is a private, nonprofit Minnesota corporation engaged in

cardiac surgery and research with an 18-year history in perfusion education.

This program is designed to prepare individuals to become an integral part of a cardiac surgical team as a clinical perfusionist. The responsibilities of the perfusionist include set-up and operation of the heart-lung bypass machine and related instrumentation, including cardiac assist devices. The perfusionist is a skilled practitioner, knowledgeable in the areas of human patho-physiology, pharmacology, hematology, and instrumentation.

The 12-month course begins each year in July. Students receive didactic, laboratory, and clinical training. Along with the University Hospital, clinical affiliation exists with eight metropolitan area hospitals and cardiac surgery teams for clinical training. The program is accredited by the Committee for Allied Health Education Accreditation of the American Medical Association. Graduates from the program will receive Certificates from Continuing Education and Extension and are eligible for the national Board examination available through the American Board of Cardiovascular Perfusion.

Prerequisite: A bachelor's degree, master's degree, or equivalent from an accredited college. Preferred majors: health science degrees, nursing, respiratory care, human biology. Preference will be given to applicants with practical experience in critical care, perfusion assistance, patient monitoring, and cardiovascular research. Specific prerequisites required: human anatomy and physiology, chemistry, physics, mathematics. Grade-point average of 2.75. Factors such as experience and current professional responsibilities also will be considered in admitting students to this program.

Admissions procedures

Applications are available from the Perfusion Training Program, University of Minnesota Heart and Lung Institute, 425 East River Road, Minneapolis, MN 55455. Telephone (612) 625-7168 or 1-800-US-HEART. Application period is from January 1 to February 28 each year. Final review of applications will be made by a selection committee of the program; interviews with the final applicants may be requested. Admission to the program is limited to six people.

Child Abuse Prevention Studies Certificate (20 credits)

The School of Social Work and Continuing Education and Extension are pleased to offer a post-baccalaureate certificate program in Child Abuse Prevention Studies (CAPS).

The purpose of the CAPS program is to provide learning opportunities for professionals and post-

Certificates

baccalaureate students who wish to increase their knowledge and skill in the area of child abuse and neglect prevention. A cohort of 20-25 students will be admitted to this 20-credit, two-year program each year, or every other year. Coursework will begin in the fall and finish in the spring, six quarters later. The program requirements for the CAPS certificate include three core courses (9 credits), one elective (3 credits), one directed study (2 credits), and a student-designed practicum with accompanying seminar (6 credits).

Coursework is presented at the graduate level, but may be taken for graduate or undergraduate credit. Students will register for one course requirement of the program each quarter. The three core courses are planned to meet one night per week from 4 to 7 at McNeal Hall on the St. Paul Campus. Please refer to the Social Work department section of this bulletin for descriptions of the three core courses.

A limited number of graduate level students may be allowed to register for the core course sequence without being admitted to the CAPS certificate program with permission by the School of Social Work.

Requirements:

- SW 5301 Child Abuse Prevention I (Research and Theory)
- SW 5302 Child Abuse Prevention II (Program Development, Implementation, and Evaluation)
- SW 5303 Child Abuse Prevention III (Strategies for Policy and Systems Change)
- 5000-level elective
- 5000-level Directed Study
- SW 5030 Integrated Experience (Practicum and Seminar)
- SW 5030 Integrated Experience (Practicum and Seminar)

A new cohort is expected to begin Fall 1994 with applications accepted beginning in February 1994. For further information and application materials, please contact the CAPS Certificate Coordinator, Continuing Education and Extension Counseling, 314 Nolte Center, 315 Pillsbury Drive SE, Minneapolis, MN 55455-0197; (612) 625-2500.

Geriatric Pharmacy certificate

Continuing Education and Extension offers a Certificate in Geriatric Pharmacy program. For more information, contact Continuing Education in Pharmacy at (512) 624-2442.

Liberal Arts certificate (IS) (45 credits)

The program of the Liberal Arts certificate is offered

to students who wish an introduction to a liberal arts education. It is the equivalent of one full-time year of university-level study. With careful planning, the certificate may constitute the freshman year of a degree program in arts or business fields. A minimum of 50 percent of all course work (23 credits) must be taken on the A-F grading system. Students transferring credits to this program from other accredited institutions must take a minimum of 12 credits at the University of Minnesota.

English Requirement (5-8 credits): Comp 1011, Writing Practice or equivalent

Core Requirement (32 credits): 8 credits in each of the following groups:

Group A, Language, Logic, Mathematics, and the Study of Argument

Group B, Physical and Biological Universe

Group C, Individual and Society

Group D, Literary and Artistic Expression

Electives: Additional liberal arts courses to make a minimum of 45 credits total for the certificate

Students interested in the Liberal Arts certificate should be sure to call (612) 625-2500 for a copy of CLA courses meeting the general education requirements offered through Extension before taking any courses.

Science and Quantitative Methods Certificate (45 credits)

This certificate is designed to provide students with a basic foundation of knowledge in sciences and quantitative methods. Through careful course selection, this certificate can be adapted to suit the needs of students seeking a variety of majors. It is particularly appropriate for those wishing to pursue advanced study in health, agricultural, or general sciences or for students who may, for personal or professional reasons, wish to enhance their quantitative skills. All courses carry college credit and are applicable to a baccalaureate degree in CLA, CBS, Agriculture, and all of the pre-health science areas at the University of Minnesota. This certificate may also address the needs of students already holding baccalaureate degrees but lacking the necessary science component for admission to Medical School, the Ophthalmology Technician Certificate, or the Cardiovascular Perfusion Technology Certificate.

A minimum of 50 percent of all course work must be taken on the A-F grading system. Students transferring credits to this program from other accredited institutions must take a minimum of 12 credits at the University of Minnesota. Early planning with a CEE adviser is strongly encouraged to assure that

coursework will satisfy requirements for completion of the program.

Core requirements (21-25 credits)

Comp 1011

Natural and Physical Sciences (8-10 credits)

Quantitative Methods (8-10 credits)

Electives: Additional courses to make a minimum of 45 credits, selected from the following areas:

- Astronomy
- Biology
- Biochemistry
- Biostatistics
- Cell Biology and Neuroanatomy
- Chemistry
- Composition*
- Ecology, Evolution, and Behavior
- Food Science and Nutrition
- Genetics and Cell Biology
- Geology and Geophysics
- Health Science Unit courses
- History of Medicine
- History of Science
- Information and Decision Sciences
- Kinesiology
- Logic
- Mathematics
- Medical Terminology courses
- Microbiology
- Operations Management Sciences
- Physics
- Physiology
- Plant Biology
- Psychology*
- Public Health*
- Rhetoric *(courses in technical writing and speech only)
- Scientific Reasoning
- Speech*
- Statistics (and Social Science statistics courses)
- Veterinary Pathobiology

*Courses from these departments may be applied to the certificate but must be pre-approved by your certificate adviser.

Additional science courses which apply toward a degree plan may also be acceptable (consult with a CEE adviser, 625-2500).

Ophthalmology Technician certificate

The Ophthalmology Technician certificate was planned by the Department of Ophthalmology at the

University of Minnesota and Continuing Education and Extension. The objective of the certificate program is to provide individuals with technical and mechanical skills and knowledge required in the treatment and diagnosis of eye diseases so that they may qualify for employment under the supervision of ophthalmologists as ophthalmic medical technicians.

Currently, employment opportunities are excellent throughout the United States. Starting salaries compare favorably with baccalaureate-level health care professionals.

The 21-month program begins each September. Requirements for the certificate will include completion of nine months of didactic and clinical training immediately followed by a 12-month externship. Admission is limited to 10 students. The program is accredited by the Committee for Allied Health Evaluation and Accreditation of the American Medical Association. Graduates from the program will be eligible to take the certification examination available through the Joint Commission on Allied Health Personnel in Ophthalmology.

For more information about the program, contact: School of Ophthalmic Medical Technology, St. Paul-Ramsey Medical Center, 640 Jackson Street, St. Paul, MN 55101, (612) 221- 3000.

Undergraduate Development Certificates in Accounting

The accounting certificates can be of value to individuals in junior accounting positions in industry, to management personnel who are required to deal with common finance and accounting data, and to business people who wish to have a basic understanding of the elementary principles of accounting and corporation finance. The Level II certificate provides a background for additional study in preparation for the Certified Public Accountant and Certified Management Accountant examinations. In most cases, students who work toward the certificate have already completed a bachelor's degree. Students who do not have a bachelor's degree should consider the accounting program in the Bachelor of Science in Business degree as a preferable alternative.

Admission to Undergraduate Development Certificates in Accounting

To be considered for admission, students must have completed the equivalent of a minimum of 90 (quarter) college credits with a minimum of a B- grade average. Students who have completed a bachelor's degree will be individually reviewed with particular emphasis on course work in the junior and senior years.

Certificates

Note: Upper division management courses (i.e., 3000- and 5000-level) in CEE are taught with the expectation that, in addition to having completed all pre-management course work, students will have either earned a B- grade average in 90 credits of college-level work, or they will have already completed a bachelor's degree.

Level I (60-64 credits)

Students transferring credits to this program from other accredited institutions must take a minimum of 16 credits in accounting courses at the University of Minnesota.

Core Requirements

Comp 1011, Writing Practice or equivalent

Comp 3022, Critical Reading and Writing for Management

Econ 1101-1102, Principles of Economics

Math 1111, College Algebra and Analytic Geometry

Math 1142, Short Calculus or Math 1251, Differential Calculus

Acct 1050 (formerly 1024/1025), Introduction to Financial Reporting

Acct 3001, Introduction to Management Accounting

Acct 3101, Intermediate Financial Reporting

Acct 5102, Advanced Financial Reporting I

Acct 3201, Intermediate Management Accounting

IDSc 1010, Fundamentals of Information Development and Use

OMS 1020, Data Analysis and Statistical Inference for Managers

IDSc 3030, Information Systems and Information Management

Note: Students who are contemplating continuing toward a degree from the Carlson School of Management should consult with a CEE adviser (625-2500) before they begin working toward the Level II Accounting Certificate.

Level II (88-92 credits)

Students transferring credits to this program from other accredited institutions must take a minimum of 24 credits in accounting courses at the University of Minnesota.

Core Requirements (64 credits)

Comp 1011, Writing Practice or equivalent

Comp 3022, Critical Reading and Writing for Management

Econ 1101-1102, Principles of Economics

IR 3002, Personnel and Industrial Relations

Math 1111, College Algebra and Analytic Geometry

Math 1142, Short Calculus or Math 1251, Differential Calculus

Acct 1050 (formerly 1024/1025), Introduction to Financial Reporting

Acct 3101, Intermediate Financial Reporting

Acct 5102, Advanced Financial Reporting I

Acct 3001, Introduction to Management Accounting

Acct 3201, Intermediate Management Accounting

IDSc 1010, Fundamentals of Information Development and Use

OMS 1020, Information Systems and Information Management

Accounting Elective (12 credits): 12 credits of 3xxx-5xxx level Accounting electives

Electives (12 -13 credits)

BFin 3000, Finance Fundamentals

BLaw 3058, Business Law

BGS 3002, Business and Society

BGS 3004, International Business

Econ 3105, Managerial Economics

Ins 5100, Risk Management and Insurance

LM 3000 Introduction to Logistics Management

Mktg 3000, Principles of Marketing

Mgmt 3001, Fundamentals of Management

Mgmt 3004, Business Policy: Strategy Formulation and Implementation

OMS 3000, Introduction to Operations Management

Undergraduate Development

Certificates in Business Administration

These certificate programs have been approved by the Carlson School of Management and arranged under the supervision of members of the faculties concerned. They are designed to present integrated, high quality, university-level courses of study of shorter length and scope than the full four-year degree programs. They are designed especially for students who wish to obtain a general grounding in the basic principles and theories of business administration and for those who want training or an opportunity for advancement in some specific field of business. Students admitted to business certificates usually are working toward an eventual Bachelor of Science in Business degree or have already completed a bachelor's degree in another area.

It is possible for a student to move from a course of study for a certificate into a planned program leading to a bachelor of science in business degree. Anyone who contemplates such a long-range objective should consult a CEE adviser before proceeding further so as to avoid any loss of credits or possible future rejection from the degree program.

Note—Upper division management courses (i.e., 3000- or 5000-level) in CEE are taught with the expectation that, in addition to having completed all pre-management course work, students will have either earned a B- grade average. Students who have completed a bachelor's degree will be individually reviewed with particular emphasis on the final 90 quarter credits.

Level I (49-52 credits)

This certificate, requiring the satisfactory completion of 49-52 credits of course work, is the equivalent of one academic year of full-time study. It offers a firm grounding in most of the basic fields of business administration. All of the credits received in completing the Level I Certificate are automatically credited toward a Level II Certificate and represent half of its required work load.

All courses must be taken on the A-F grading system. Students transferring credits to this program from other accredited institutions must take a minimum of 12 credits of business courses from the core requirement at the University of Minnesota.

Pre-management Requirement (37-40 credits)

- Comp 1011, Writing Practice or equivalent
- Econ 1101-1102, Principles of Economics
- IDSc 1010, Fundamentals of Information Development and Use
- OMS 1020, Data Analysis and Statistical Inference for Managers
- Acct 1050 (formerly 1024/125), Introduction to Financial Reporting
- Math 1111, College Algebra and Analytic Geometry
- Psy 1001, General Psychology
- Core Requirement (12-13 credits)
- Acct 3001, Introduction to Management Accounting
- Econ 3105, Managerial Economics
- BGS 3002, Business and Society
- BGS 3004, International Business
- IDSc 3030, Information Systems and Information Management
- IR 3002, Personnel and Industrial Relations
- Ins 5100, Risk Management and Insurance
- BFin 0001C Introduction to Investments (certificate credit—does not apply toward a degree program)
- BFin 3000 Finance Fundamentals
- Mktg 3000 Principles of Marketing
- BLaw 3058 Business Law
- Mgmt 3001 Fundamentals of Management
- Mgmt 3004 Business Policy: Strategy Formulation and Implementation
- Math 1142 Short Calculus or Math 1251 Calculus Differential

Note: Students who are contemplating continuing toward a degree from the Carlson School of Manage-

ment should consult with a CEE adviser (625-2500) before they begin working toward the Level II Business Administration certificate.

Level II (90 credits)

The Level II Business Administration certificate is a continuation of the Level I certificate, expanding the pre-management and core requirement to provide a broader base of general knowledge and an opportunity for specialization. The completion of the certificate requirement of 90 credit-hours represents the equivalent of two academic years of full-time university-level study. The course program may be considered to be roughly that of the sophomore and junior years of a four-year degree program with particular emphasis on the basic principles and theories of business administration.

Only non-business electives may be taken on the S-N grading system. Students transferring credits to this program from other accredited institutions must take a minimum of 24 credits of business courses (not including the pre-management requirement) at the University of Minnesota.

Pre-management Requirement (42-45 credits)

- Comp 1011, Writing Practice or equivalent
- Econ 1101-1102, Principles of Economics
- Acct 1050 (formerly 1024/1025), Introduction to Financial Reporting
- IDSc 1010, Fundamentals of Information Development and Use
- OMS 1020, Data Analysis and Statistical Inference for Managers
- Math 1111, College Algebra and Analytic Geometry
- Math 1142, Short Calculus or Math 1251, Differential Calculus
- Psy 1001, General Psychology

Core Requirement (24 -25 credits)

- Acct 3001, Introduction to Management Accounting
- Econ 3105, Managerial Economics
- OMS 3000, Introduction to Operations Management
- IDSc 3030, Information Systems and Information Management
- BFin 3000, Finance Fundamentals
- BGS 3002, Business and Society
- BGS 3004, International Business
- Mktg 3000, Principles of Marketing
- BLaw 3058, Business Law
- IR 3002, Personnel and Industrial Relations
- Ins 5100, Risk Management and Insurance
- LM 3000, Introduction to Logistics Management
- Mgmt 3001, Fundamentals of Management
- Mgmt 3004, Business Policy: Strategy Formulation and Implementation

Electives in the Carlson School of Management:

At least 16 additional upper division credits in courses in business administration. These may be selected from the core group above or from other courses.

Other Electives: Non-business courses from areas such as physical and biological science, individual and society, and artistic expression to make a minimum of 90 credits for the certificate.

Credit and Financial Management certificate (63-66 credits)

The Credit and Financial Management certificate program was developed cooperatively by Continuing Education and Extension, the Carlson School of Management of the University of Minnesota, and the National Association of Credit Management. The program is directed to students seeking careers in trade credit management, commercial bank and finance company loan management, and senior executive positions in financial management.

Specialized training and skills are necessary in the administration of accounts receivable in today's business. The trade credit manager must often function as an adviser to customers. Analyzing lines of credit requires familiarity with all financial and marketing aspects of the customer's business. Credit managers must also be able to communicate and work with top management in their companies toward the integration of sales and financial goals, and thus are in a unique position to advance to senior management positions.

All courses must be taken on the A-F grading system. Students transferring credits to this program from other accredited institutions must take a minimum of 16 credits at the University of Minnesota.

For more information about working toward the certificate program, contact Nancy Gonzalez in CEE Counseling, (612) 625-2500.

Not all of the courses required for the National Association of Credit Management (NACM) certification are available at the University of Minnesota. These additional courses required by the NACM are available by correspondence from the national office of the NACM and at local community colleges. Please contact Lois Bell at (612) 341-9615 for specific information about obtaining these additional non-University classes to obtain NACM certification.

Note—Upper division management courses (i.e., 3000- or 5000-level) in CEE are taught with the expectation that, in addition to having completed all pre-management course work, students will have either earned a B- grade average in 90 credits of college-level work, or they will have already completed a bachelor's degree.

Admission to the Credit and Financial Management Certificate

To be considered for admission, students must have completed the equivalent of a minimum of 90 (quarter) college credits with a minimum of a B- grade average. Students who have completed a bachelor's degree will be individually reviewed with particular emphasis on the final 90 quarter credits.

Core Requirement (55-58 credits)

(Note—Credit and Financial Management Certificate students should take BLaw 3078 and 3088 as soon as possible. These courses are currently under review for continuance.)

Acct 1050 (formerly 1024/1025), Introduction to Financial Reporting
Acct 3001, Introduction to Management Accounting
Acct 3101, Intermediate Financial Reporting
BLaw 3058-3078, 3088, Business Law
Econ 1101-1102, Principles of Economics
IR 3002, Personnel and Industrial Relations
Mgmt 3002, Psychology in Management
Mktg 3000, Principles of Marketing
Comp 1011, Writing Practice
Spch 1101, Fundamentals of Speech-Communication: Oral Communication
BFin 3000, Finance Fundamentals

Electives

Acct 3201, Intermediate Management Accounting
Econ 3701, Money and Banking
GC 1275 (formerly GC 3732), Consumer Transactions and the Law
BFin 3100, Financial Management
BFin 3601, Bank Financial Management (offered infrequently)
Ins 5100, Risk Management and Insurance
Mgmt 3001, Fundamentals of Management
LM 3000, Introduction to Logistics Management

Industrial Relations certificate (45 credits)

This program of study is arranged and coordinated by the Industrial Relations Center of the Carlson School of Management. It is designed to provide technical training in the field of industrial relations and in the use of specialist techniques. Advanced professional training in industrial relations is available only through the day and evening M.A. programs and Ph.D. program. See the *Graduate School Bulletin*.

Caution—Courses at the 3000 level are taught primarily for juniors and seniors. Courses taught at the 5000 level are taught primarily for juniors, seniors, and graduate-level students.

Students may use S-N grading in Psy 3801 and in non-business electives up to a maximum of 12 credits in the certificate. Students transferring to this program from other accredited institutions must take a minimum of 12 credits in industrial relations at the University of Minnesota.

Note—Upper division management courses (i.e., 3000- or 5000-level) in CEE are taught with the expectation that, in addition to having completed all pre-management course work, students will have either earned a B- grade average in 90 credits of college-level work, or they will have already completed a bachelor's degree.

Core Requirement (33 credits)

- Econ 1101-1102, Principles of Economics
- IR 3002, Personnel and Industrial Relations
- IR 3007, Collective Bargaining and Labor Relations
- IR 3010, The Individual in the Organization, or Psy 5702, Psychology of Individualized Behavior in Organizations
- Psy 1001, General Psychology
- Psy 3801, Introduction to Statistical Methods or approved substitute (e.g. OMS 1020)
- Soc 1001, Introduction to Sociology

Electives (12 credits)

- Econ 3501 or 5531, Labor Economics
- Econ 5534, Economic Security
- Econ 5561, Wages and Employment
- IR 0001C and 0002C, Supervision I and II (certificate credit—does not apply toward a degree program)
- IR 3000, Topics in Industrial Relations
- IR 5000, Topics in Industrial Relations
- IR course (any 3000 or 5000 level IR course)
- IDSc 3002 (formerly MIS 3102), Fundamentals of Management Information Systems
- Mgmt 3001, Fundamental of Management
- Mgmt 3001, Psychology in Management
- Psy 3011, Introduction to the Psychology of Learning
- Psy 3135, Introduction to Individual Differences
- Psy 3201, Introduction to Social Psychology
- Psy 5501, Vocational Psychology
- Psy 5701, Personnel and Industrial Psychology
- Psy 5701, Personnel and Industrial Psychology
- Psy 5703, Psychology of Organizational Training and Development
- Psy 5705, Work Motivation
- OMS 5160, Deterministic Modeling and Optimization
- Soc 5201, Introduction to Social Psychology
- Soc 5411, Formal Organizations

Undergraduate Development Certificates in Engineering and Science

The technical progress of American industry has reached its high level of production through engineering teamwork. The engineering team is a three-part team:

- a. Engineers and scientists who formulate ideas and create new products and services.
- b. Engineering technicians who help develop, test, and apply these ideas and creations.
- c. Skilled workers who make the products and perform routine services.

It is the responsibility of our colleges and universities to provide training opportunities for persons capable of becoming professional engineers, scientists and engineering technicians. Vocational and trade schools have the responsibility of training the skilled worker.

The Department of Extension Classes of Continuing Education and Extension offers a variety of certificates for the part-time student who has the ability to carry college-level courses leading to a career at the engineer or engineering technician level. Interested students should study these certificate programs carefully and select the program best suited to their interests, abilities, present and future employment, and ultimate educational goal.

The UDC is intended to provide a focus to the planning of continuing education activities in particular disciplines, and recognition of completion of clearly identified segments of an educational program indicative of increasing levels of technical capability. Degree credit courses offered in certificate programs may be applied toward a subsequent baccalaureate degree with departmental approval. If a later degree is anticipated, early contact with the academic department and application for admission to the Institute of Technology is important.

In general, 45-credit certificates indicate familiarity with the topical area equivalent to that of a first year in a collegiate program. An important feature of the UDC Series is that the credit content, i.e., 45, 90, 135, will be included as a part of the title of the certificate. (For example, UDC in Electrical Engineering—90 credits.) This feature will be of considerable value when the certificate is later presented by the individual to an employer or agency for consideration. Students interested in working toward a certificate should contact an adviser in the CEE Counseling Office, telephone 625-2500, as soon as possible. However, application for admission to the certificate programs should not be made until students have completed 12 applicable credits.

Certificates

Undergraduate Development Certificate in Computer Science—45 credits

The initial Undergraduate Development Certificate in Computer Science (UDC) is designed to provide maximum exposure to computer science in a 45-credit program. It should be recognized, however, that this concentration is achieved at the expense of related scientific and general nontechnical topics. Students subsequently pursuing degree programs will be required to make up these deficiencies. Potential degree students should make early contact with CEE Counseling and the Department of Computer Science.

The UDC in Computer Science—45 credits can represent a first step for a student with college-level ability into a field of technical and scientific computer application. It can also provide a means of broadening the perspectives and skills of persons already employed at the programmer or technician level.

Students transferring credits to this program from other accredited institutions must take a minimum of 12 credits in the concentration requirement at the University of Minnesota.

Core Requirement (21-24 credits)

Math 1251, 1252, 1261, Differential Calculus, Integral Calculus, Algebra and Geometry of Euclidian Space (formerly 1211, 1221, 1241)

Comp 1011, Writing Practice or equivalent

CSci 3311, Discrete Structures of Computer Science

Concentration Requirement (16-20 credits)

CSci 3316 The Structure of Computer Programming I; and CSci 3317 The Structure of Computer Programming II

CSci 3321 and CSci 3322, Algorithms and Data Structures I and II

CSci 3327 Introduction to the Organization of Computer Systems

Electives—Nontechnical electives to make a minimum of 45 credits for the certificate. Institute of Technology nontechnical electives may be chosen from the following fields: anthropology, art, biological sciences, botany, classics, economics, geography, history, humanities, languages (except scientific language courses), literature, music theory, philosophy, political science, psychology, religion, social science, sociology, speech, zoology and others (see the current I.T. bulletin).

Undergraduate Development Certificate in Computer Science—90 credits

This certificate continues the development of the undergraduate core curriculum begun in the Undergraduate Development Certificate in Computer Sci-

ence—45 credits. The CSci courses provide a base for later specialization while related technical electives give exposure to at least one technical discipline of particular interest to the student.

If a student's objective is an undergraduate degree, planning of the completion of this certificate should include early consultation with a CSci adviser to plan the concentration and technical requirements.

Students transferring credits to this program from other accredited institutions must take a minimum of 24 credits at the University of Minnesota, not including those taken for the UDC in Computer Science—45 credits. Elective credits may not be used to satisfy this residency requirement.

Prerequisite: Completion of the UDC in Computer Science—45 credits

Core Requirement (16 credits)

Math 3251 Vector Differential Calculus

Math 3261 Differential Equations with Linear Algebra

Stat 3091 Introduction to Probability and Statistics

CSci 5102 Structure and Programming of Software Systems II

Concentration Requirement (12 credits): Any 12 credits in 3000 or 5000 courses in computer science.

Related Technical Requirement (8 credits)—Courses chosen in this group should reflect areas in which students see potential application of personal computer science skills. Some examples of related technical areas include health sciences, transportation, and environmental engineering. Course selection should be worked out with an adviser in Computer Science in the field selected.

Tightening job markets and shifting national priorities often call for an interdisciplinary orientation. Upon successful petition, up to 8 additional credits may be taken from this area in place of the nontechnical electives group requirement (see below) in order to form a coherent, expanded related technical area.

Electives—Courses from nontechnical or biological science electives, to make a minimum of 90 credits, including those from the 45 credit UDC in Computer Science.

Undergraduate Development Certificate in Engineering and Science—45 credits

The UDC in Engineering and Science—45 credits is designed to provide students with the fundamentals of mathematics, physics, and broad technical communications skills which will enable them to handle certain engineering support assignments in any engineering field and will give them the necessary background for

more specialized or advanced study either as engineers or as engineering technicians. All courses in the UDC in Engineering and Science—45 credits program carry degree credit, representing the first year of required course work for an engineering degree, and are applicable to a baccalaureate degree upon admission to the Institute of Technology.

Refer to the introductory statement about the UDC at the beginning of this section.

Students transferring credits to this program from other accredited institutions must take a minimum of 12 credits from the core requirement at the University of Minnesota.

Prerequisite: High school graduate or equivalent; 2 years of algebra and 2 years of geometry, including trigonometry.

Core Requirements (36 credits)

- Comp 1011, Writing Practice or equivalent
- Math 1251, Differential Calculus (formerly 1211)
- Math 1252, Integral Calculus (formerly 1221)
- Math 1261, Algebra and Geometry of Euclidean space
- Phys 1251, or 1271/1275, 1252 or 1281/1285, General Physics and Lab
- Chem 1001, or 1051 Chemical Principles I

Plus two of the following five courses:

- CSci 3101, A FORTRAN Introduction to Computer Programming
- CSci 3102, A Pascal Introduction to Computer Programming
- Chem 1051 or 1052, Chemical Principles I or II
- CSci 3113, An Introduction to Programming in C
- ME 1025, Engineering Graphics

Electives—Courses from nontechnical electives to make a minimum of 45 credits for the certificate.

Undergraduate Development Certificate in Engineering and Science—90 credits

(Includes 45 credits from Undergraduate Development Certificate in Engineering and Science)

This certificate is designed for students who have an engineering degree objective and who wish to continue working toward one of the engineering curriculums of the Institute of Technology. It will also be of value to technicians who desire to widen and deepen their technical role.

This approach involves interweaving into one expanding pattern the elements of basic science, engineering science, professional engineering work, and design. To build the sound foundation required in engineering work, the first two years of all engineering curriculums emphasize the basic sciences of mathematics, physics, and chemistry.

Work in nontechnical and biological science electives is also required throughout the entire engineering program. This is intended to broaden viewpoints and to add to perspective.

All classes in the UDC in Engineering and Science—90 credits carry degree credit and are transferable to the Institute of Technology when admission requirements are satisfied. Refer to the introductory statement on the UDC at the beginning of this section.

Students transferring credits to this program from other accredited institutions must take a minimum of 24 credits from the core requirement or spread requirement at the University of Minnesota, not including those taken for the UDC in Engineering and Science—45 Credits.

Prerequisite: Completion of the UDC in Engineering and Science—45 credits.

Core Requirements (20-24 credits)

- Math 3251 or 3311, Vector Differential Calculus
- Math 3261 or 3321, Differential Equations with Linear Algebra
- AEM 1015, Statics
- Phys 1253 or 1291/1295, General Physics and Laboratory
- Chem 1051 or 1052, Chemical Principles I or II

Spread Requirement—A minimum of 8 credits from the following courses

- Math 3262 or 3331, Sequences, Series, and Approximation
- AEM 3016, Deformable Body Mechanics
- AEM 3036, Dynamics
- EE 3009, Linear Circuits I
- EE 1400, Circuits Laboratory
- CE 3400, Fluid Mechanics
- Chem 1051 or 1052 (if not used previously), Chemical Principles I or II
- Phys 1254 or 3501, Physics
- Stat 3091, Probability and Statistics or
- ME 3900, Introduction to Engineering Statistics

Electives—Courses from nontechnical or biological science electives, or mathematics or chemistry or Comp 3031 or physics or Comp 3085 or additional courses from the spread requirement to make a minimum of 90 credits total for the certificate. Institute of Technology nontechnical electives may be chosen from the following fields: anthropology, art, biological sciences, botany, classics, economics, geography, history, humanities, languages (except scientific language courses), literature, music theory, philosophy, political science, psychology, religion, social science, sociology, speech, zoology and others (see the current I.T. bulletin).

Certificates

Undergraduate Development Certificate in Civil Engineering—90 credits

(Includes 45 credits from Undergraduate Development Certificate in Engineering and Science)

The Undergraduate Development Certificate in Civil Engineering—90 credits, enables a student to continue the Undergraduate Development Certificate work in courses normally required in civil engineering degree programs and establishes the prerequisite work needed to pursue courses at the third-year level. Elective credits may be chosen from third-year offerings in civil engineering. It is designed to help engineering technicians assume a role of increased responsibility in working with civil engineers. It also represents a coherent body of study in helping determine whether further work toward a civil engineering degree should be pursued. Upon acceptance by the Institute of Technology, a student may transfer appropriate work completed in a certificate program to a bachelor's degree program.

Students transferring credits to this program from other accredited institutions must take a minimum of 24 credits at the University of Minnesota, not including those taken for the UDC in Engineering and Science—45 credits.

Prerequisite: Completion of the UDC in Engineering and Science—45 credits.

Core Requirements (25 credits selected from the following)

Math 3251 or 3311, Vector Differential Calculus

Math 3261 or 3321, Differential Equations with Linear Algebra

Math 3252 or 3331, Multivariable Integral Calculus
Chem 1051-1052 or 1004-1005† or 1031-1032, General Principles of Chemistry

Phys 1253 or 1291/1295, General Physics and Laboratory

AEM 1015 Statics

AEM 3016, Deformable Body Mechanics

CE 3400, Fluid Mechanics

CSci 3101, FORTRAN

CSci 3113, Introduction to Programming in C

CSci 3102, Introduction to PASCAL

ME 3301, Thermodynamics

Concentration Requirement (20 credits)—Select courses from the list below in the fields desired
CE 3100, Introduction to Surveying and Mapping
CE 3200, Introduction to Transportation Engineering
CE 3300, Elements of Soil Mechanics
CE 3400, Fluid Mechanics (if not taken in core requirement)

CE 5405, Hydrology and Hydrologic Design

CE 5603, Introduction to Construction Materials

CE 5401, Water Resources Engineering

CE 5500, Analysis and Design of Water Supply Systems

CE 5501, Analysis and Design of Wastewater Systems

CE 5703, Project Management

Undergraduate Development Certificate in Electrical Engineering—90 credits

(Includes 45 credits from Undergraduate Development Certificate in Engineering and Science)

The Undergraduate Development Certificate in Electrical Engineering—90 credits enables a student to continue the Undergraduate Development Certificate work in courses normally required in electrical engineering degree programs and establishes the prerequisite work needed to pursue courses at the third-year level. It is designed to help engineering technicians assume a role of increased responsibility in working with industrial engineers. It also represents a coherent body of study in helping determine whether further work toward an electrical engineering degree should be pursued. Upon acceptance by the Institute of Technology, a student may transfer appropriate work completed in a certificate program to a bachelor's degree program.

Students transferring credits to this program from other accredited institutions must take a minimum of 24 credits in the core requirement at the University of Minnesota, not including those taken for the UDC in Engineering and Science—45 credits.

Prerequisite: Completion of the UDC in Engineering and Science—45 credits.

Core Requirement (minimum of 36 credits selected from the following)

Math 3251 or 3311, Vector Differential Calculus

Math 3261 or 3321, Differential Equations with Linear Algebra

Math 3221, Introduction to Linear Algebra and Linear Differential Equations

Math 3252 or 3331, Multivariable Integral Calculus

EE 1400, Circuits Laboratory

EE 3009, Linear Circuits I

EE 3010, Linear Circuits II

Phys 1253/1254 or 3501, General Physics and Laboratory

Third-Year Electrical Engineering courses (3000-5000 level)

Electives—Courses from nontechnical or biological science electives, to make a minimum of 90 credits, including those from the UDC in Engineering and Science—45 credits. Institute of Technology nontechnical electives may be chosen from the following fields: anthropology, art, biological sciences, botany,

classics, economics, geography, history, humanities, languages (except scientific language courses), literature, music theory, philosophy, political science, psychology, religion, social science, sociology, speech, zoology and others (see the current I.T. bulletin).

Undergraduate Development Certificate in Electrical Engineering—135 credits

(Includes 90 credits from Undergraduate Development Certificate in Electrical Engineering)

Students pursuing the B.E.E. degree must be formally admitted to upper division Electrical Engineering in the Institute of Technology.

An increasing number of employers are recognizing the value of an individual who has completed the course work that is central to the third year of an electrical engineering bachelor's program together with supporting topics. The objective may either be demonstration of ability to participate more actively in the engineering team or for the individual to pursue the remainder of the work toward a Bachelor of Electrical Engineering Degree on an accelerated basis. Course sequences at the fourth-year level may also serve either of the above two purposes.

Students transferring credits to this program from other accredited institutions must take a minimum of 36 credits at the University of Minnesota, not including those taken for the UDC in Electrical Engineering—90 credits.

Prerequisite: Completion of the UDC in Electrical Engineering—90 credits

Core Requirement (minimum of 30 credits selected from the following)

- EE 3011, Signal Analysis
- EE 3012, System Design
- EE 3060, Analog Electronics
- EE 3062, Digital Electronics
- EE 3110, Electric and Magnetic Fields
- EE 3111, Electromagnetic Waves
- EE 3351, Introduction to Logic Design and Microprocessors
- EE 3352, Microprocessors
- EE 3400-3401-3402, Junior Electrical Engineering Laboratory
- Comp 3031, Technical Writing for Engineers
- Any other EE 5000-level courses

NOTE—Students working toward a degree should check with an I.T. adviser before choosing technical electives.

Electives—Courses from nontechnical (maximum 6 credits) or technical electives (including fourth-year courses in electrical engineering) to make a minimum

of 135 credits for the certificate. Institute of Technology nontechnical electives may be chosen from the following fields: anthropology, art, biological sciences, botany, classics, economics, geography, history, humanities, languages (except scientific language courses), literature, music theory, philosophy, political science, psychology, religion, social science, sociology, speech, zoology and others (see the current I.T. bulletin).

Undergraduate Development Certificate in Industrial Engineering—90 credits

(Includes 45 credits from Undergraduate Development Certificate in Engineering and Science)

The Undergraduate Development Certificate in Industrial Engineering—90 credits enables a student to continue the Undergraduate Development Certificate work in courses normally required in industrial engineering degree programs and establishes the prerequisite work needed to pursue courses at the third-year level. It is designed to help engineering technicians assume a role of increased responsibility in working with industrial engineers. It also represents a coherent body of study in helping determine whether further work toward an industrial engineering degree should be pursued. Upon acceptance by the Institute of Technology a student may transfer appropriate work completed in a certificate program to a bachelor's degree program.

Students transferring credits to this program from other accredited institutions must take a minimum of 24 credits at the University of Minnesota, not including those taken for the UDC in Engineering and Science—45 credits. Prerequisite: Completion of the UDC in Engineering and Science—45 credits.

Prerequisite: Completion of the UDC in Engineering and Science—45 credits

Core Requirements (29 credits)

- CSci 3101, A FORTRAN Introduction to Computer Programming
- Math 3261, Differential Equations with Linear Algebra
- Math 3251, Vector Differential Calculus
- Math 3321 may be substituted for 3261 and 3251
- Stat 3091, Probability and Statistics or
- ME 3900, Introduction to Engineering Statistics
- IEOR 3000, (formerly IEOR 5000) Introduction to Industrial Engineering Analysis
- Comp 3031, Technical Writing for Engineers
- Phys 1253 or 1291/1295, General Physics and Laboratory

Certificates

Concentration Requirements (19 credits): Select at least four courses from those listed below:

IEOR 5010, Introduction to Work Analysis

IEOR 5020, Engineering Cost Accounting, Analysis and Control

IEOR 5030, Quality Control and Reliability

IEOR 5040, Introduction to Operations Research

IEOR 5050, Engineering Economic Analysis

Other IEOR courses as they are offered

Note: Prerequisites and course overlap between certificate and degree credit courses should be evaluated by an I.T. adviser.

Undergraduate Development Certificate in Mechanical Engineering—94-99 credits

(Includes 45 credits from Undergraduate Development Certificate in Engineering and Science)

The Undergraduate Development Certificate in Mechanical Engineering—94-96 credits enables a student to continue the Undergraduate Development Certificate work in courses normally required in mechanical engineering degree programs and establishes the prerequisite work needed to pursue courses at the third-year level. It is designed to help engineering technicians assume a role of increased responsibility in working with mechanical engineers. It also represents a coherent body of study in helping determine whether further work toward a mechanical engineering degree should be pursued. Upon acceptance by the Institute of Technology a student may transfer appropriate work completed in a certificate program to a bachelor's degree program.

Students transferring credits to this program from other accredited institutions must take a minimum of 24 credits at the University of Minnesota, not including those taken for the UDC in Engineering and Science—45 credits.

Prerequisite: Completion of the UDC in Engineering and Science—45-48 credits.

Core Requirements (45 credits)

CSci 3101, A FORTRAN Introduction to Computer Programming

Math 3261, Differential Equations with Linear Algebra

Math 3251, Vector Differential Calculus

Math 3321 may be used in lieu of Math 3261 and 3251

AEM 1015, Statics

AEM 3016, Deformable Body Mechanics

AEM 3036, Dynamics

Phys 1253 or 1291/1295, General Physics and Laboratory

ME 3020, Mechanical Engineering Computation

ME 3201, Mechanical Engineering Systems Analysis

ME 3203, Analysis of Mechanism Systems or

ME 3205, Engineering Systems Design

ME 3301, Thermodynamics

ME 3303, Applied Thermodynamics or

ME 5342, Heat Transfer

Electives—Additional electives from the following courses to make a minimum of 94-96 credits including credits from UDC in Engineering and Science—45 credits.

ME 3205, Engineering Systems Design

ME 5342, Heat Transfer (if not used in core requirement)

ME 5344, Thermodynamics of Fluid Flow

ME 3701-3702, Basic Measurement Laboratory I-II

CE 3400 or AEM 3200, Fluid Mechanics

IEOR 3000, Introduction to Industrial Engineering Analysis

ME 3900 or Stat 3091, Statistics

Note—ME 1025 Engineering Graphics or accepted equivalent is required if not already taken in the UDC Engineering and Science—45 credits

Numbering/Symbols/Maps

Abbreviations

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Course numbering

All University courses carry four-digit numbers. The first digit indicates the credit level of the course. See sample below:

0000C to 0999C	Certificate credit course
0000 to 0999	Noncredit course
1000 to 1999	Introductory degree-credit course— primarily for freshmen and sophomores
3000 to 3999	Intermediate degree-credit course— primarily for juniors and seniors. Also open to other students with at least C averages overall and in all prerequisite work
5000 to 5999	Advanced degree credit course— primarily for juniors, seniors, and graduate-level students
8000 to 8999	Degree credit course open only to students who have been admitted to the University of Minnesota Graduate School

To take a course beginning with the numeral 5 (indicating a degree credit course intended primarily for juniors, seniors, and graduate students) or beginning with the numeral 8 (indicating a course intended only for students admitted to the University of Minnesota Graduate School) for graduate credit, see graduate credit, page 38.

Symbols

The following symbols are used throughout this Bulletin:

- A hyphen between numbers indicates a sequence course, the units of which must be taken in order, unless otherwise indicated.
- ★ Enrollment space limited. See instructions on registration in limited-enrollment sections, page 11.
- A joint day/Extension class open to Extension students and to regularly enrolled day school students. See page 20.
- † All courses listed before this symbol must be completed before credit may be received.
- § No credit is given if credit has been received for equivalent course listed after this symbol.
- ¶ Concurrent (simultaneous) registration is allowed (or required) in courses listed after this symbol
- # Consent of instructor.
- (IS) Course also available through Department of Extension Independent Study. See page 42.
- Δ Consent of department offering course is required.
- Consent of college offering course is required.
- cr Credit
- Qtr Quarter
- Sem Semester
- Spec Special Term
- S/N Satisfactory/No credit grading system. See page 35.
- A/F Letter grading system. See page 35.
- Lect Lecture
- Rec Recitation
- Prereq Prerequisite. See page 34.
- Sec Section
- Equiv Equivalent
- Grad Graduate

General Information

Department abbreviations, course designators

Acct, *Accounting*
AdEd, *Adult and Teacher Education*
AEM, *Aerospace Engineering and Mechanics*
Afro, *Afro-American and African Studies*
AgEc, *Agricultural and Applied Economics*
AgEn, *Agricultural Engineering*
AgET, *Agricultural Engineering Technology*
Agro, *Agronomy and Plant Genetics*
AmIn, *American Indian Studies*
AmSt, *American Studies*
ANE, *Ancient Near Eastern Studies*
AnSt, *Ancient Studies*
AnSc, *Animal Science*
Anth, *Anthropology*
Arab, *Arabic*
Arch, *Architecture*
ArEd, *Art Education*
ArH, *Art History*
ArtS, *Art, Studio*
Ast, *Astronomy*
BioC, *Biochemistry*
Biol, *Biology*
BFin, *Finance*
BGS, *Business, Government, and Society*
BLaw, *Business Law*
BME, *Business and Marketing Education*
(Vocational Education)
CBN, *Cell Biology and Neuroanatomy*
Chem, *Chemistry*
Chic, *Chicano Studies*
CAPy, *Child and Adolescent Psychiatry*
CPsy, *Child Psychology*
Chn, *Chinese*
CE, *Civil and Mineral Engineering*
Clas, *Classical and Near Eastern Studies*
CLS, *Clinical Laboratory Science*
CVM, *College of Veterinary Medicine*
CDis, *Communication Disorders*
CLit, *Comparative Literature*
CSDS, *Comparative Studies in Discourse and Society*
CSch, *Compleat Scholar* (noncredit)
CSW, *Compleat Scholar Weekends* (noncredit)
Comp, *English Composition*
CSci, *Computer Science*
CrSr, *Croatian and Serbian Language*
CSCL, *Cultural Studies and Comparative Literature*

CISy, *Curriculum and Instructional Systems*
Dnce, *Dance*
Dan, *Danish*
Dsgn, *Design*
DHA, *Design, Housing and Apparel*
Dtch, *Dutch*
EAS, *East Asian Studies*
EALL, *East Asian Languages and Literature*
EEB, *Ecology, Evolution, and Behavior*
Econ, *Economics*
EdPA, *Educational Policy and Administration*
(includes courses formerly in HiEd, SPFE, and EdAd)
EPsy, *Educational Psychology*
EE, *Electrical Engineering*
Elem, *Elementary Education*
Engl, *English* (language and literature)
EngW, *English* (creative and professional writing)
ESL, *English as a Second Language*
Ent, *Entomology*
FPCH, *Family Practice and Community Health*
FSoS, *Family Social Science*
BFin, *Finance* (business)
Fin, *Finnish*
FW, *Fisheries and Wildlife*
FScN, *Food Science and Nutrition*
FSSP, *Foreign Studies SPAN* (formerly FoSt)
ForP, *Forest Products*
FR, *Forest Resources*
Fren, *French*
Frlt, *French and Italian*
GC, *General College*
GCB, *Genetics and Cell Biology*
Geog, *Geography*
Geo, *Geology and Geophysics*
Ger, *German*
Grk, *Greek*
HSU, *Health Science Units*
Hebr, *Hebrew*
Hndi, *Hindi*
Hist, *History*
HMed, *History of Medicine*
HSci, *History of Science and Technology*
HEEd, *Home Economics Education* (Vocational Education)
HSem, *Honors Opportunities (CLA)*
Hort, *Horticultural Science*
Hsg, *Housing*
Hum, *Humanities*
Ind, *Industrial Education* (Vocational Education)
IEOR, *Industrial Engineering/Operations Research*

Department abbreviations

IR, <i>Industrial Relations</i>	Phar, <i>Pharmacy Practice</i>
CEBS, <i>Certified Employee Benefits Specialist</i>	Phil, <i>Philosophy</i>
IDSc, <i>Information and Decision Sciences</i>	PE, <i>Physical Education</i>
IoTT, <i>Institute of Technology</i>	PMed, <i>Physical Medicine and Rehabilitation</i>
ID, <i>Interdepartmental Study</i>	Phys, <i>Physics</i>
IntR, <i>International Relations</i>	PBio, <i>Plant Biology</i>
Ins, <i>Insurance</i>	PIPa, <i>Plant Pathology</i>
Ital, <i>Italian</i>	Plsh, <i>Polish</i>
Jpn, <i>Japanese</i>	Pol, <i>Political Science</i>
JwSt, <i>Jewish Studies</i>	Port, <i>Portuguese</i>
Jour, <i>Journalism and Mass Communication</i>	PSch, <i>Practical Scholar (noncredit)</i>
Kin, <i>Kinesiology</i>	Psy, <i>Psychology</i>
Kor, <i>Korean</i>	PA, <i>Public Affairs</i>
LA, <i>Landscape Architecture</i>	PubH, <i>Public Health</i>
LgTT, <i>Language, Teaching, Technology</i>	Rec, <i>Recreation, Park and Leisure Studies</i>
LAS, <i>Latin American Studies</i>	RelS, <i>Religious Studies</i>
Lat, <i>Latin</i>	REX, <i>Research Explorations (noncredit)</i>
LASk, <i>Learning and Academic Skills</i>	Rhet, <i>Rhetoric</i>
Ling, <i>Linguistics</i>	Russ, <i>Russian</i>
LM, <i>Logistics Management</i>	Scan, <i>Scandinavian</i>
Mgmt, <i>Management</i>	SeEd, <i>Secondary Education</i>
Mar, <i>Marathi</i>	Slav, <i>Slavic</i>
Mktg, <i>Marketing</i>	SAPh, <i>Social and Administrative Pharmacy</i>
MatS, <i>Materials Science and Engineering</i>	SW, <i>Social Work</i>
Math, <i>Mathematics</i>	Soc, <i>Sociology</i>
MthE, <i>Mathematics Education</i>	Soil, <i>Soil Science</i>
ME, <i>Mechanical Engineering</i>	SALC, <i>South Asian Languages and Cultures</i>
MeSt, <i>Medieval Studies</i>	Span, <i>Spanish</i>
MicB, <i>Microbiology</i>	SpPt, <i>Spanish-Portuguese</i>
MELC, <i>Middle Eastern Languages and Cultures</i>	Spch, <i>Speech-Communication</i>
Mil, <i>Military Science</i>	Stat, <i>Statistics</i>
MiMu, <i>Mind and Muse (noncredit)</i>	Swed, <i>Swedish</i>
MdGk, <i>Modern Greek</i>	TexC, <i>Textiles and Clothing</i>
Mus, <i>Music</i>	TrIn, <i>Translation and Interpreting</i>
MuEd, <i>Music Education</i>	Th, <i>Theatre Arts</i>
Nav, <i>Naval Science</i>	Turk, <i>Turkish</i>
Nor, <i>Norwegian</i>	UrBS, <i>Urban Studies</i>
Nurs, <i>Nursing</i>	CVM, <i>College of Veterinary Medicine</i>
OMS, <i>Operations and Management Science</i>	VoEd, <i>Vocational Education</i>
Per, <i>Persian</i>	WoSt, <i>Women's Studies</i>
Phcg, <i>Pharmacognosy</i>	YoSt, <i>Youth Development and Research (Youth Studies)</i>

Campus building abbreviations

Campus and parking maps are included in this bulletin following this list. Special maps designed to help students with mobility handicaps get around the Minneapolis and St. Paul campuses are available. Call Disability Services, 624-4037, and ask for the "Guide for Students with Disabilities." The map shows handicapped parking places, building entrance levels, accessible buildings, curb cuts, location of modified rest rooms, and more.

- ABLMS (StP), *Andrew C. Boss Laboratory-Meat Science*
AgEng(StP), *Agricultural Engineering*
Agr(StP), *Agronomy*
AkerH, *Akerman Hall*
ApH, *Appleby Hall*
AlderH (StP), *Alderman Hall*
AmundH, *Amundson Hall*
AndH, *Anderson Hall*
AnScVM (StP), *Animal Science/Veterinary Medicine*
Aquatic Center, *Aquatic Center*
Arch, *Architecture*
Armory, *Armory Bldg.*
ArtB, *Art Building (2020 Washington Ave. So., Minneapolis)*
BellMus, *Museum of Natural History*
BFAB, *Bierman Field Athletic Bldg.*
BioSci(StP), *Biological Sciences Center*
BlegH, *Blegen Hall*
BorH (StP), *Borlaug Hall*
Botany, *Botany*
BuH, *Burton Hall*
CentLib (StP), *Central Library*
ChDev, *Child Development*
CookeH, *Cooke Hall (1900 University Avenue S.E.)*
ChRC, *Children's Rehabilitation Center*
CivMinE, *Civil and Mineral Engineering*
CMU, *Coffman Memorial Union*
ClaOff (StP), *Classroom Office Bldg.*
CofH(StP), *Coffey Hall*
DiehlH, *Diehl Hall*
EBCEC (StP), *Earle Brown Continuing Education Center*
Ecology (StP), *Ecology Bldg.*
EddyH, *Eddy Hall*
EdHAn, *Eddy Hall Annex*
EE/CSci, *Electrical Engineering/Computer Science Bldg.*
ElectE, *Electrical Engineering*
EltH, *Elliott Hall*
FergH, *Ferguson Hall (West Bank)*
FieldHse, *University Field House (1800 University Avenue S.E.)*
FolH, *Folwell Hall*
FordH, *Ford Hall*
FronH, *Frontier Hall*
FraserH, *Fraser Hall*
FScN(StP), *Food Science and Nutrition*
GRaptCtr (StP), *Gabbert Raptor Center*
GorL (StP), *Gortner Laboratory of Biochemistry*
GrnH (StP), *Green Hall*
Gym (StP), *Gymnasium (St. Paul campus)*
HckrH(StP), *Haecker Hall*
HodsonH (StP), *Hodson Hall*
HrG(StP), *Horticulture Greenhouse*
HSUnitF, *Health Sciences Unit F*
HHHctr, *Hubert H. Humphrey Center (West Bank)*
Intermedia Arts (formerly UC Video), *Intermedia Arts of Minnesota (425 Ontario S.E.)*
JacH, *Jackson Hall*
JohH, *Johnston Hall*
JonesH, *Jones Hall*
KaufL (StP), *Kaufert Lab*
KlaCt, *Klaeber Court*
KoltH, *Kolthoff Hall*
Law, *Law Building (West Bank)*
LindH, *Lind Hall*
MacP, *MacPhail Center (1128 LaSalle Ave., Minneapolis)*
Mayo, *Mayo Memorial Hospital*
McNH(StP), *McNeal Hall*
MechE, *Mechanical Engineering*
MdbH, *Middlebrook Hall*
Mgmt/Econ, *Management/Economics Bldg.*
MMA, *Mayo Memorial Auditorium*
MoosT, *Moos Tower (formerly HSUnitA)*
MurH, *Murphy Hall*
MusEd, *Music Education*
NCEE, *Nolte Center for Continuing Education*

Campus Building abbreviations

NorrisH, *Norris Hall*
NichH, *Nicholson Hall*
NMA, *Northrop Memorial Auditorium*
NorH(StP), *North Hall*
OMWL, *O. Meredith Wilson Library*
OwreH, *Owre Hall*
PalmC (StP), *Palmer Classroom Building*
PeikH, *Peik Hall*
PeikG, *Peik Gymnasium*
PetH (StP), *Peters Hall*
Phys, *Physics, Tate Laboratory of*
PillsH, *Pillsbury Hall*
PiH, *Pioneer Hall*
PolDB, *Police Department Bldg.*
PtH, *Pattee Hall*
PWB, *Phillips Wangensteen Bldg.*
RarigC, *Rarig Center*
ScottH, *Scott Hall*
SciCB, *Science Classroom Bldg.*

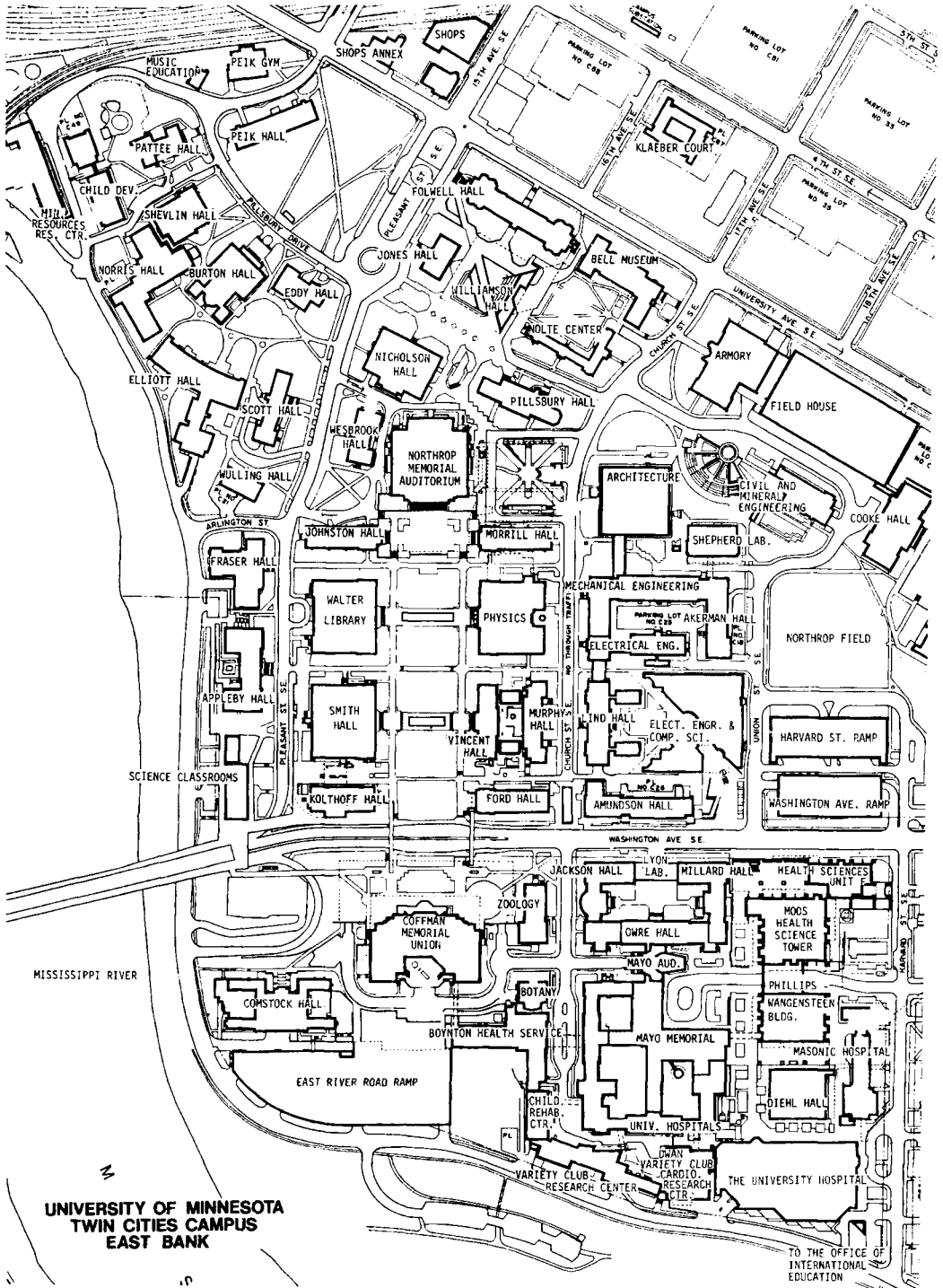
ShevH, *Shevlin Hall*
SmithH, *Smith Hall*
SnH (StP), *Snyder Hall*
Soils (StP), *Soils*
SocSci, *Social Sciences Bldg.*
StakH(StP), *Stakman Hall of Plant Pathology*
StCen (StP), *Student Center*
TerH, *Territorial Hall*
URC, *University Recreation Center*
U-Tech Bldg., *University Technology Center*
(1313 Fifth Street S.E.)
VinH, *Vincent Hall*
VoTech (StP), *Vocational-Technical Education*
WaLib, *Walter Library*
WesH, *Wesbrook Hall*
WilleyH, *Willey Hall (West Bank)*
WmsonH, *Williamson Hall*
WullH, *Wulling Hall*
Zoology, *Zoology*

Abbreviations for off-campus classes

The following abbreviations for off-campus class sites are used throughout this Bulletin:

Roseville Area HS	Roseville Area High School—West Campus 1261 W. Highway 36, Roseville 55113
Richfield HS	Richfield Senior High School 7001 Harriet Ave. S., Richfield 55423

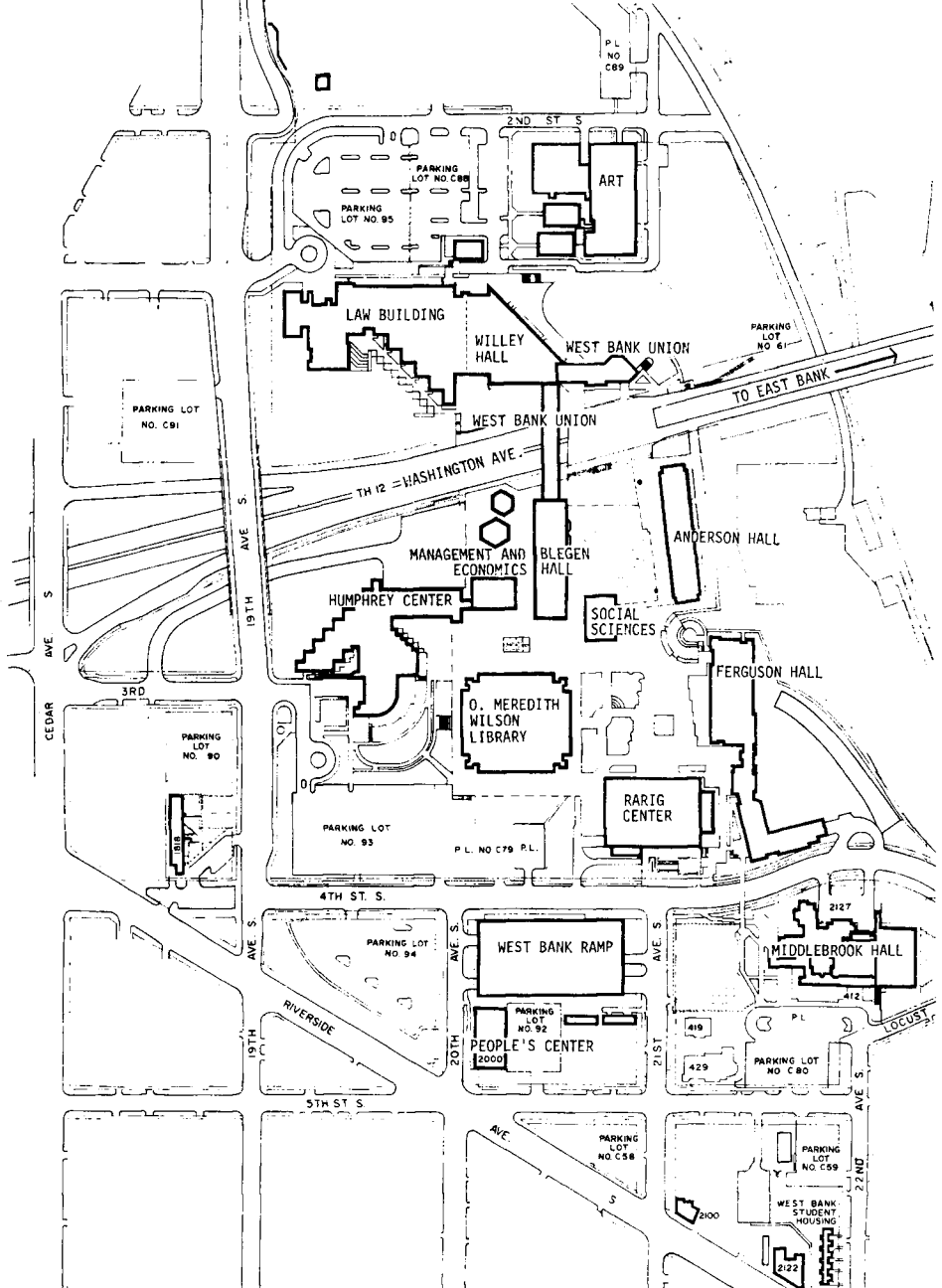
See Parking Facilities on page 449 in this bulletin for information about parking.

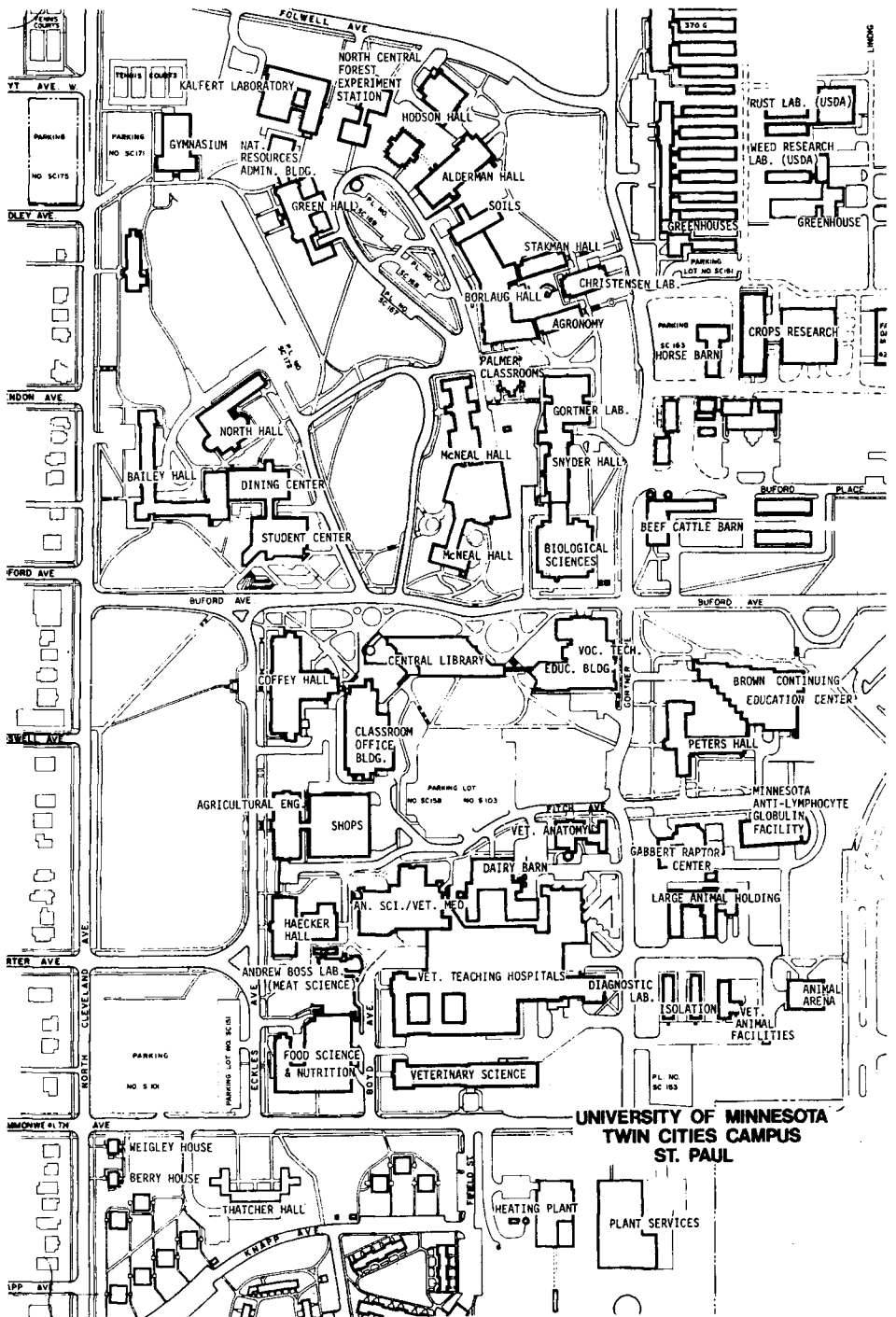


UNIVERSITY OF MINNESOTA
TWIN CITIES CAMPUS
EAST BANK

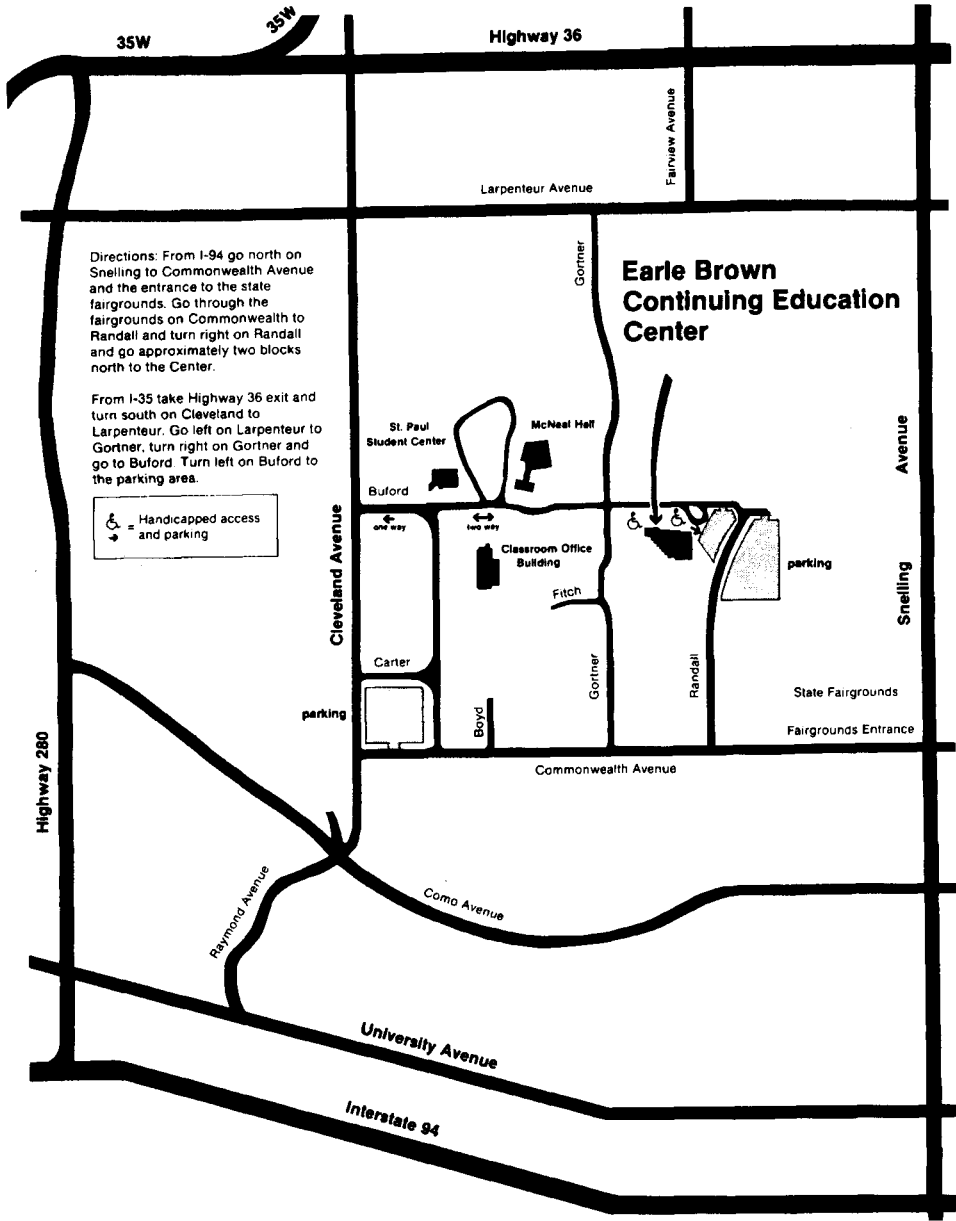
TO THE OFFICE OF
INTERNATIONAL
EDUCATION

UNIVERSITY OF MINNESOTA TWIN CITIES CAMPUS WEST BANK





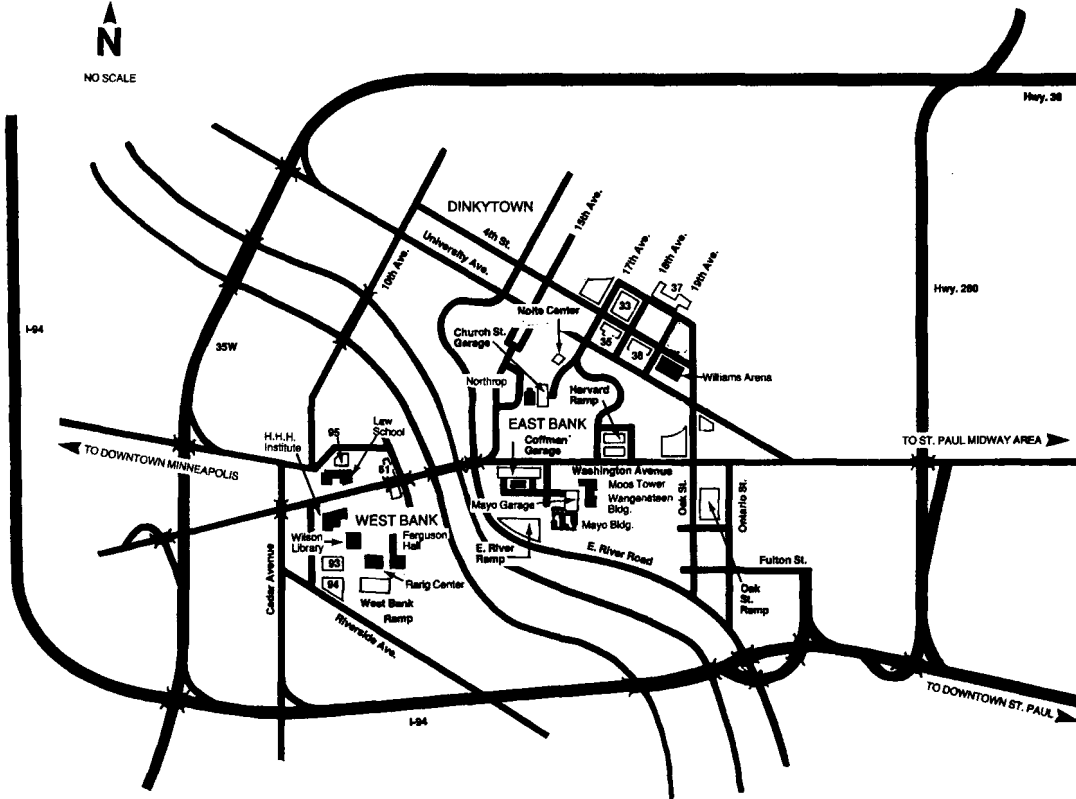
ACCESS ROUTES TO EARLE BROWN CONTINUING EDUCATION CENTER—ST. PAUL CAMPUS
Parking Map

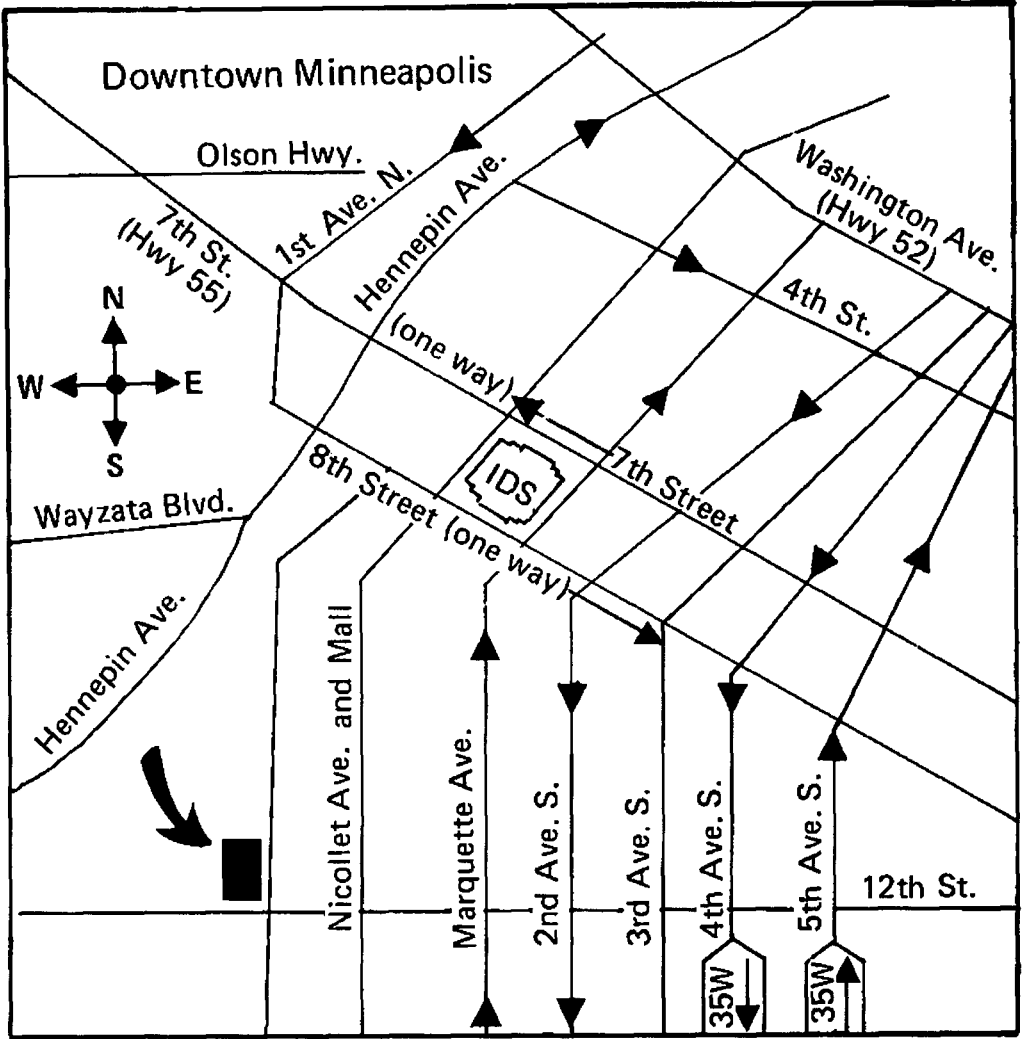


MAJOR CAMPUS ACCESS ROUTES

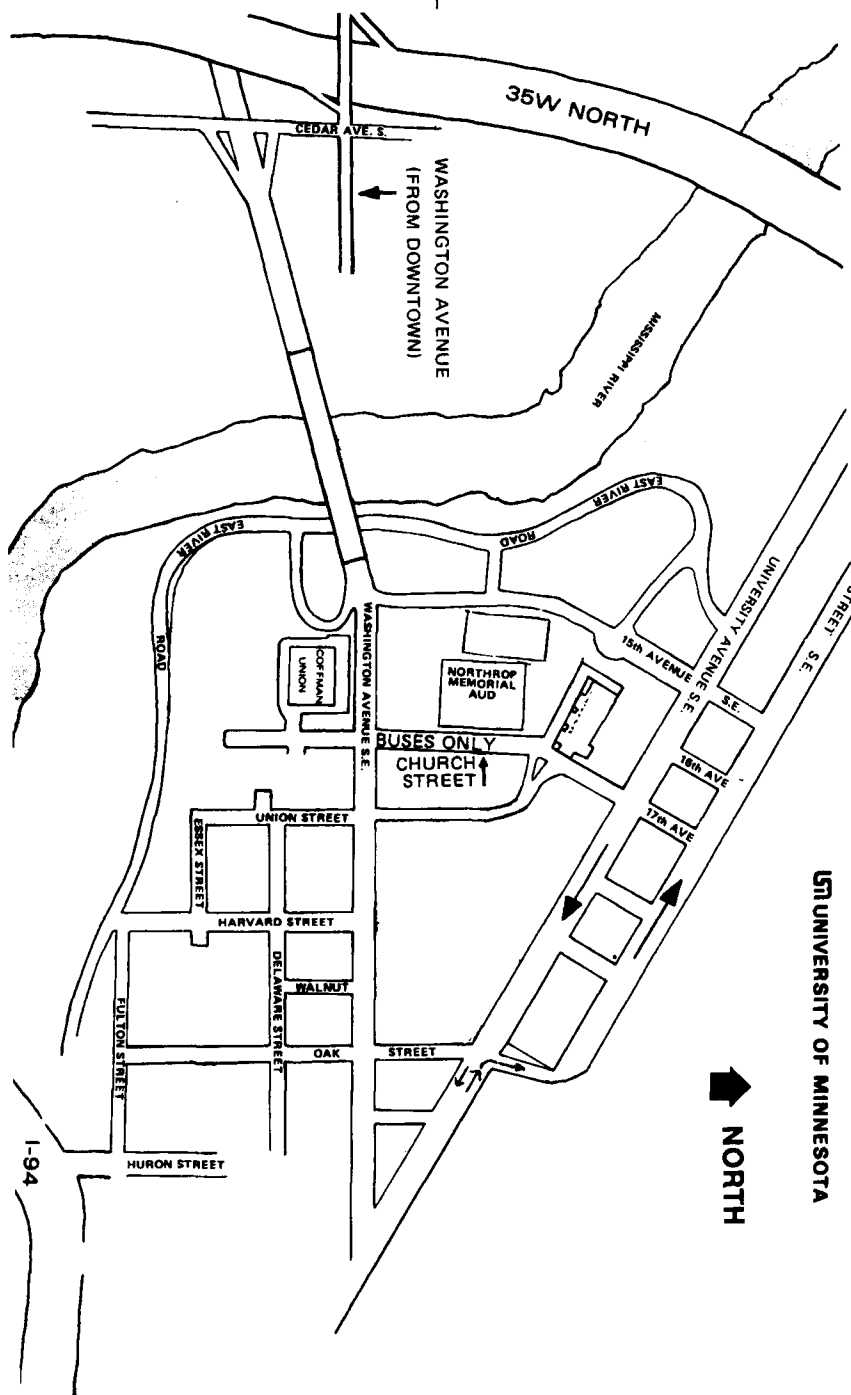


NO SCALE





MacPhail Center
1128 LaSalle Ave., Minneapolis



Off-Campus Classes

Neighborhood Centers

Courses are listed (by term) below for off-campus, neighborhood centers in the Twin Cities area.

Some schools are closed for school functions or holidays; classes will meet on campus when neighborhood centers are closed.

See the maps on page 510.

See the course listings section of this Bulletin (arranged alphabetically by department) for course descriptions. See page 498 for departmental abbreviations.

See page 501 for addresses and abbreviations of neighborhood centers.

See the When and How to Register section of this Bulletin for registration instructions and dates. In-person registrations are not accepted at the neighborhood centers. Early registration is recommended.

Books for most classes at neighborhood centers are available from the Minnesota Book Center in Williamson Hall on the east bank campus (625-6000) or at the Smith Bookstore on the west bank campus (625-3000). The notice directly under each department heading in the Course Offerings section lists the bookstore that sells books for classes in that department. Be sure to read the Bookstores section of this Bulletin, page 17, for more information.

Note—Courses listed at the locations below were correct at the time material was submitted for publication. Check the course listings section for more complete and accurate information.

The list below is not all inclusive; other classes meet at special off-campus locations and at the MacPhail Center, downtown Minneapolis. They are described in the *Course Offerings* section.

Roseville Area High School—West Campus

1261 West Highway 36, Roseville (map on page 510)

Fall Quarter

EPsy 5651	Managing Problem Behavior in the Classroom
GC 1111	Weather and Climate
Math 1111	College Algebra and Analytic Geometry
Math 1201	Pre-Calculus
Math 1211	Calculus I
Psy 3604	Abnormal Psychology

Fall Semester

Econ 1101	Principles of Economics (Micro)
-----------	---------------------------------

Winter Quarter

Math 1142	Short Calculus
Math 1211	Calculus I
Math 1252	Integral Calculus II
Psy 1001	Introduction to Psychology

Spring Semester

Econ 1102	Principles of Economics (Macro)
-----------	---------------------------------

Spring Quarter

Comp 1011	Writing Practice
EPsy 5651	Managing Problem Behavior in the Classroom
Mktg 3000	Principles of Marketing
Math 1221	Calculus II
Psy 3201	Introduction to Social Psychology

Richfield Senior High School

7001 Harriet Avenue S., Richfield (map on page 510)

Classes meet in the north wing of the high school on the east side of the building across from the athletic field and railroad tracks. Enter the parking lot on the Harriet Avenue side. Entrance doors are by the smoke stack.

Fall Quarter

Comp 1011	Writing Practice
Mktg 3000	Principles of Marketing
Math 1111	College Algebra and Analytic Geometry
Math 1201	Pre-Calculus
Math 1211	Calculus I
Psy 1001	Introduction to Psychology

Fall Semester

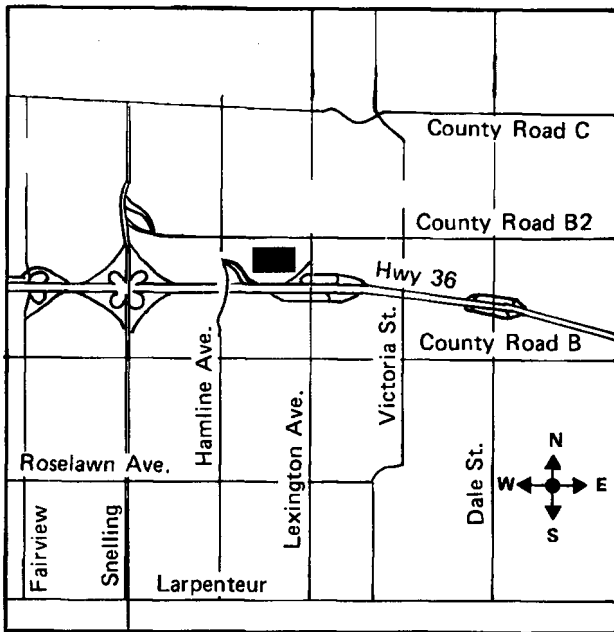
Econ 1101	Principles of Economics (Micro)
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Winter Quarter

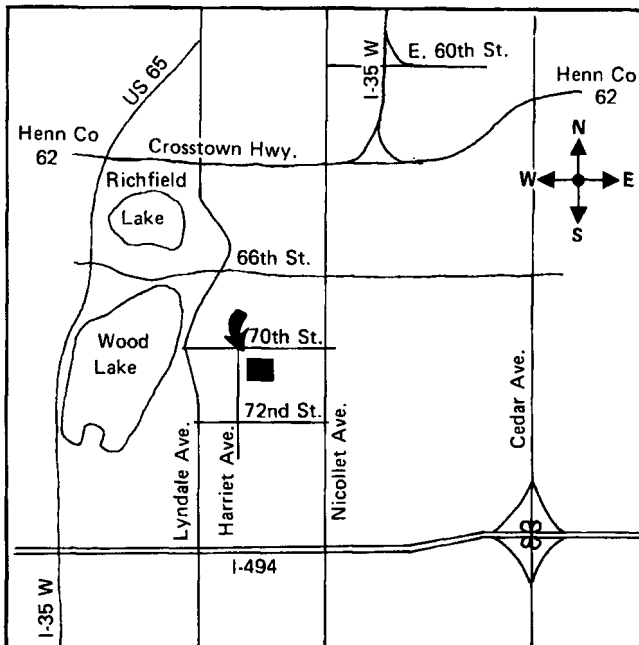
Math 1251	Integral Calculus I
Phil 1001	Logic

Spring Quarter

Math 1252	Integral Calculus II
Psy 3604	Abnormal Psychology



Roseville Area High School
 1261 W. Highway 36, Roseville



Richfield High School
 7001 Harriet Ave. S., Richfield
 (Classes meet in north wing, east side of building;
 enter doors by the smoke stack.)

TO: All Students of the University of Minnesota
FROM: President Nils Hasselmo
RE: **DRUG-FREE CAMPUS AND WORK PLACE COMPLIANCE**

Federal laws¹ require the University of Minnesota to carry out a program to prevent the unlawful possession, use, or distribution of illegal drugs and abuse of alcohol by its students. The University's failure to comply with these laws may make the University and its students ineligible to receive federal funds or any form of financial assistance under any federal program, including student loans.

This memo outlines the University's compliance. All students of the University are expected to abide by the conditions outlined here.

PROHIBITED ACTIONS

Drug and alcohol abuse affects the health, safety, and well-being of all students and restricts the University's ability to carry out its mission. Therefore, the University of Minnesota:

1. Prohibits the unlawful possession, use, or distribution of alcohol and illicit drugs by students on all campuses and at all facilities of the University or as part of the University's activities; and
2. Prohibits the unlawful manufacture, distribution, dispensation, possession, or use of controlled substances in the work place.

SANCTIONS

Students who violate the prohibition against illicit drugs and alcohol are subject to discipline. Item 11 of the student conduct code states:

When the violation of a federal or state law, including but not limited to those governing alcoholic beverages, drugs, gambling, sex offenses, indecent conduct, or arson, occurs on campus, the offense will also constitute an offense against the University.

Potential sanctions for violation include: (1) warning and admonition; (2) required compliance; (3) confiscation of illicit drugs or alcohol; (4) probation; and (5) suspension or expulsion. Sanctions also may include required completion of an appropriate treatment or rehabilitation program. Sanctions will reflect the particular violation and its severity. Referral for criminal prosecution may occur, where appropriate. More detailed information on procedures and sanctions can be found in *A Statement of Standards of Student Conduct Enforceable by University Agencies*.

In addition, housing handbooks for each campus describe policies and disciplinary procedures for violations that occur in University housing. Residents violating alcohol or drug policies will be referred for disciplinary action. Depending on the circumstances of the violation, disciplinary action may include, but not be limited to: warning, resident hall fine, referral to the University Counseling Center, restriction of privileges, community service, probation, or expulsion.

Students must be aware that there are significant criminal penalties, under state and federal law, for the unlawful possession or distribution of alcohol and illicit drugs. Penalties include prison terms, property forfeiture, and fines.

Details of relevant state and federal laws and their penalties are enclosed with this memo.

EDUCATIONAL AND TREATMENT PROGRAMS

Services for students include: diagnosis and assessment, short-term counseling, referral, and support groups. Consultation also is available for supervisors whose staff members may have alcohol- and/or drug-related problems.

Federal law requires that any information obtained from clients or patients by doctors, psychologists, or drug-treatment centers remain confidential. This makes it possible for people to receive help for drug problems without getting into trouble with the law.

Counseling and assistance for **students** with drug or alcohol problems is available at the following locations:

Twin Cities: Boynton Health Service, (612) 624-1940

Duluth: Student Health and Counseling Center, (218) 726-8155

Morris: Counseling Services, (612) 589-2211 ext. 6060

Waseca: Student Development Office, (507) 835-1000 ext. 229

Crookston: Residential Life Office, (218) 281-6510 ext. 352

Students who live in residence halls also can contact residence-hall staff for help and information.

Student health insurance covers some types of assistance. Private health insurance may provide similar or additional coverage.

Drug-Free Campus

Educational programs for students include: educational fairs, lectures, awareness campaigns, classes for DWI offenders, residence-hall programs, and an alcohol/drug resource center.

Federal Penalties and Sanctions for Illegal Possession of a Controlled Substance

21 U.S.C. 844(a)

First conviction: Up to one year imprisonment and fined at least \$1,000 but not more than \$100,000 or both.

After one prior drug conviction: At least 15 days in prison, not to exceed 2 years and fined at least \$2,500 but not more than \$250,000 or both.

After 2 or more prior drug convictions: At least 90 days in prison, not to exceed 3 years and fined at least \$5,000 but not more than \$250,000 or both.

Special sentencing provisions for possession of crack cocaine: Mandatory at least five years in prison, not to exceed 20 years and fined up to \$250,000 or both, if:

- (a) First conviction and the amount of crack possessed exceeds five grams
- (b) Second crack conviction and the amount of crack possessed exceeds three grams.
- (c) Third or subsequent crack conviction and the amount of crack possessed exceeds one gram.

21 U.S.C. 853(a)(2) and 881(a)(7)

Forfeiture of personal and real property used to possess or to facilitate possession of a controlled substance if that offense is punishable by more than one year imprisonment. (See special sentencing provisions re: crack.)

21 U.S.C. 881(a)(4)

Forfeiture of vehicles, boats, aircraft or any other conveyance used to transport or conceal a controlled substance.

21 U.S.C. 844a

Civil fine of up to \$10,000 (pending adoption of final regulations).

21 U.S.C. 853a

Denial of Federal benefits, such as student loans, grants, contracts, and professional and commercial licenses up to one year for first offense, up to five years for second and subsequent offenses.

18 U.S.C. 922(g)

Ineligible to receive or purchase a firearm.

Miscellaneous

Revocation of certain Federal licenses and benefits, e.g. pilot licenses, public housing tenancy, etc., are vested within the authorities of individual Federal agencies.

Effects of Alcohol

Alcohol consumption causes a number of marked changes in behavior. Even low doses significantly impair the judgement and coordination required to drive a car safely, increasing the likelihood that the driver will be involved in an accident. Low to moderate doses of alcohol also increase the incidence of a variety of aggressive acts, including spouse and child abuse. Moderate to high doses of alcohol cause marked impairments in higher mental functions, severely altering a person's ability to learn and remember information. Very high doses cause respiratory depression and death. If combined with other depressants of the central nervous system, much lower doses of alcohol will produce the effects just described.

Repeated use of alcohol can lead to dependence. Sudden cessation of alcohol intake is likely to produce withdrawal symptoms, including severe anxiety, tremors, hallucinations, and convulsions. Alcohol withdrawal can be life threatening. Long-term consumption of large quantities of alcohol, particularly when combined with poor nutrition can also lead to permanent damage to vital organs such as the brain and liver.

Mothers who drink alcohol during pregnancy may give birth to infants with fetal alcohol syndrome. These infants have irreversible physical abnormalities and mental retardation. In addition, research indicates that children of alcoholic parents are a greater risk than other youngsters of becoming alcoholics.

Federal Register/Vol. 55, No. 159/Thursday, August 16, 1990/Rules and Regulations, pp. 33588-33591

¹The Drug-Free Schools and Communities Act Amendments of 1989 and the Drug-Free Work Place Act of 1989.

Federal Trafficking Penalties

CSA	Penalty			Drug	Quantity
	First Offense	Second Offense			
I and II	Not less than 5 years. Not more than 40 years.		Not less than 10 years. Not more than life.	METHAMPHETAMINE	10-99 gm or 100-999 gm mixture
				HEROIN	100-999 gm mixture
				COCAINE	500-4,999 gm mixture
	If death or serious injury, not less than 20 years. Not more than life.		If death or serious injury, not less than life.	CONCAINE BASE	5-49 gm mixture
	Fine of not more than \$2 million individual, \$5 million other than individual.		Fine of not more than \$4 million individual, \$10 million other than individual.	PCP	10-99 gm or 100-999 gm mixture
				LSD	1-10 gm mixture
				FENTANYL	40-399 gm mixture
				FENTANYL ANALOGUE	10-99 gm mixture
	Not less than 10 years. Not more than life.		Not less than 20 years, not more than life.	METHAMPHETAMINE	100 gm or more or 1 kg ¹ or more mixture
				HEROIN	1 kg or more mixture
				COCAINE	5 kg or more mixture
	If death or serious injury, not less than 20 years. Not more than life.		If death or serious injury, not less than life.	COCAINE BASE	50 gm or more mixture
	Fine of not more than \$4 million individual, \$10 million other than individual.		Fine of not more than \$8 million individual, \$20 million other than individual.	PCP	100 gm or more or 1 kg or more mixture
				LSD	10 gm or more mixture
			FENTANYL	400 gm or more mixture	
			FENTANYL ANALOGUE	100 gm or more mixture	
	Drug	Quantity		First Offense	Second Offense
	Others ²	Any		Not more than 20 years. If death or serious injury, not less than 20 years, not more than life. Fine \$1 million individual, \$5 million not individual.	Not more than 30 years. If death or serious injury, life. Fine \$2 million individual, \$10 million not individual.
III	All	Any		Not more than 5 years. Fine not more than \$250,000 individual, \$1 million not individual.	Not more than 10 years. Fine not more than \$500,000 individual, \$2 million not individual.
IV	All	Any		Not more than 3 years. Fine not more than \$250,000 individual, \$1 million not individual.	Not more than 6 years. Fine not more than \$500,000 individual, \$2 million not individual.
V	All	Any		Not more than 1 year. Fine not more than \$100,000 individual, \$250,000 not individual.	Not more than 2 years. Fine not more than \$200,000 individual, \$500,000 not individual.

¹Law as originally enacted states 100 gm. Congress requested to make technical correction to 1 kg.

²Does not include marijuana, hashish, or hash oil. (See separate chart.)

Federal Trafficking Penalties—Marijuana

As of November 18, 1988

Quantity	Description	First Offense	Second Offense
1,000 kg or more; or 1,000 or more plants	MARIJUANA Mixture containing detectable quantity*	Not less than 10 years, not more than life. If death or serious injury, not less than 20 years, not more than life. Fine not more than \$4 million individual, \$10 million other than individual.	Not less than 20 years, not more than life. If death or serious injury, not less than life. Fine not more than \$8 million individual, \$20 million other than individual.
100 kg to 1,000 kg; or 100-999 plants	MARIJUANA Mixture containing detectable quantity*	Not less than 5 years, not more than 40 years. If death or serious injury, not less than 20 years, not more than life. Fine not more than \$2 million individual, \$5 million other than individual.	Not less than 10 years, not more than life. If death or serious injury, not less than life. Fine not more than \$4 million individual, \$10 million other than individual.
50 to 100 kg or 50-99 plants	MARIJUANA	Not more than 20 years. If death or serious injury, not less than 20 years, not more than life.	Not more than 30 years. If death or serious injury, life.
10-100 kg	HASHISH	Fine \$1 million individual, \$5 million other than individual.	Fine \$2 million individual, \$10 million other than individual.
1 to 100 kg	HASHISH OIL		
Less than 50 kg	MARIJUANA	Not more than 5 years.	Not more than 10 years.
Less than 10 kg	HASHISH	Fine not more than \$250,000 individual, \$1 million other than individual.	Fine \$500,000 individual, \$2 million other than individual.
Less than 1 kg	HASHISH OIL		

*Includes Hashish and Hashish Oil

(Marijuana is a Schedule I Controlled Substance)

Controlled Substances—Uses and Effects

Drugs CSA Schedules	Trade or Other Names	Medical Uses	Dependence		Tolerance	Duration (hours)	Usual Methods of Administration	Possible Effects	Effects of Overdose	Withdrawal Syndrome
			Physical	Psychological						
NARCOTICS										
Opium II, III, V	Dover's Powder, Paregoric, Parepectolin	Analgesic, antidiarrheal	High	High	Yes	3-6	Oral, smoked	Euphoria, drowsiness, respiratory depression, constricted pupils, nausea	Slow and shallow breathing, clammy skin, convulsions, coma, possible death	Watery eyes, runny nose, yawning, loss of appetite, irritability. tremors, panic cramps, nausea, chills and sweating
Morphine II, III	Morphine, MS-Contin, Roxanol, Roxanol-SR	Analgesic, antitussive	High	High	Yes	3-6	Oral, smoked, injected			
Codeine II, III, V	Tylenol w/Codeine, Empirin w/Codeine, Robitussin A-C, Fiorinal w/Codeine	Analgesic, antitussive	Moderate	Moderate	Yes	3-6	Oral, injected			
Heroin I	Diacetylmorphine, Horse, Smack	None	High	High	Yes	3-6	Injected, sniffed, smoked			
Hydromorphone II	Dialaudid	Analgesic	High	High	Yes	3-6	Oral, injected			
Meperidine (Pethidine) II	Demerol, Mepergan	Analgesic	High	High	Yes	3-6	Oral, injected			
Methadone II	Dolophine, Methadone, Methadose	Analgesic	High	High-Low	Yes	12-24	Oral, injected			
Other Narcotics I, II, III, IV, V	Numorphan, Percodan, Percocet, Tylox, Tussionex, Fentanyl, Darvon, Lomotil, Talwin ²	Analgesic, antidiarrheal, antitussive	High-Low	High-Low	Yes	Variable	Oral, injected			
DEPRESSANTS										
Chloral Hydrate IV	Noctec	Hypnotic	Moderate	Moderate	Yes	5-8	Oral	Slurred speech, disorientation, drunken behavior without odor of alcohol	Shallow respiration, clammy skin, dilated pupils, weak and rapid pulse, coma, possible death	Anxiety, insomnia tremors, delirium, convulsions. possible death
Barbiturates II, III, IV	Amytal, Butisol, Fiorinal, Lotusate, Nembutal, Seconal, Tuinal, Phenobarbital	Anesthetic, hypnotic, anticonvulsant, sedative	High-Mod	High-Mod	Yes	1-16	Oral			
Benzodiazepines IV	Ativan, Dalmane, Diazepam, Librium, Xanax, Serax, Valium, Tranxexa, Verstran, Versed, Halcion, Paxipam, Flestoril	Antianxiety, sedative, anticonvulsant, hypnotic	Low	Low	Yes	4-8	Oral			
Methaqualone I	Quaalude	Sedative, hypnotic	High	High	Yes	4-8	Oral			
Glutethimide III	Doriden	Sedative, hypnotic	High	Moderate	Yes	4-8	Oral			
Other Depressants III, IV	Equanil, Miltown, Noludar, Placidyl, Vaimid	Antianxiety, sedative, hypnotic	Moderate	Moderate	Yes	4-8	Oral			

¹ Designated a narcotic under the CSA

² Not designated a narcotic by the CSA

Controlled Substances—Uses and Effects

Drugs	CSA Schedules	Trade or Other Names	Medical Uses	Dependence		Tolerance	Duration (hours)	Usual Methods of Administration	Possible Effects	Effects of Overdose	Withdrawal Syndrome
				Physical	Psychological						
STIMULANTS											
Cocaine	II	Coke, Flake, Snow, Crack	Local anesthetic	Possible	High	Yes	1-2	Sniffed, smoked, injected	increases alertness, excitation, euphoria, increased pulse rate	Agitation, Increase in body temperature, hallucinations,	Apathy long periods of sleep.
Amphetamines	II	Biphetamine, Delcobase, Desoxyyn, Dexedrine, Obetrol	Attention deficiency, narcolepsy, weight control	Possible	High	Yes	2-4	Oral, injected	and blood pressure, insomnia,	convulsions, possible death	irritability, depression,
Phenmetrazine	II	Preludin	Weight control	Possible	High	Yes	2-4	Oral, injected	loss of appetite		disorientation
Methylphenidate	II	Ritalin	Attention deficiency, narcolepsy	Possible	Moderate	Yes	2-4	Oral, injected			
Other Stimulants	III, IV	Adipex, Cylert, Didrex, Ionamin, Moffiat, Plegine, Sancrex, Tenuate, Tepanil, Prelu-2	Weight control	Possible	High	Yes	2-4	Oral, injected			
HALLUCINOGENS											
LSD	I	Acid, Microdot	None	None	Unknown	Yes	8-12	Oral	illusions and hallucinations,	Longer, more intense "trip" episodes,	Withdrawal syndrome not reported
Mescaline and Peyote	I	Mexc, Buttons, Cactus	None	None	Unknown	Yes	8-12	Oral	poor perception of time and distance	psychosis,	reported
Amphetamine Variants	I	2,5-DMA; PMA; STP; MDA; MDMA; TMA; DOM, DOB	None	Unknown	Unknown	Yes	Variable	Oral, injected			
Phencyclidine	II	PCP, Angel Dust, Hog	None	Unknown	High	Yes	Days	Smoked, oral, injected			
Phencyclidine Analogues	I	PCE, PCPy, TCP	None	Unknown	High	Yes	Days	Smoked, oral, injected			
Other Hallucinogens	I	Bufofenine, Ibogaine, DMT, DET, Psilocybin, Psilocin	None	None	Unknown	Possible	Variable	Smoked, oral, injected sniffed			
CANNABIS											
Marijuana	I	Pot, AcapulcoGold, Grass, Reefer, Sinsemilla, Thai Sticks	None	Unknown	Moderate	Yes	2-4	Smoked, oral	Euphoria, relaxed	Fatigue, paranoia	Occasional
Tetrahydrocannabinol	I, II	THC, Marinol	Cancer chemotherapy antinauseant	Unknown	Moderate	Yes	2-4	Smoked, oral	inhibitions, increased appetite,	possible psychosis	insomnia, hyperactivity,
Hashish		Hash	None	Unknown	Moderate	Yes	2-4	Smoked, oral	disoriented behavior		decreased appetite
Hashish Oil	I	Hash Oil	None	Unknown	Moderate	Yes	2-4	Smoked, oral			

¹ Designated a narcotic under the CSA² Not designated a narcotic by the CSA

MINNESOTA CRIMES AND PENALTIES—DRUGS

Sale	Possession	Penalty ¹
10 grams crack, 50 grams/200 doses cocaine/narcotic/heroin/methamphetamine/hallucinogen, 50 kilos marijuana	25 grams crack, 500 grams/500 doses cocaine/heroin/methamphetamine/hallucinogen, 100 kilos marijuana	0-30 years imprisonment, 4 year mandatory minimum if prior drug felony; up to \$1 million fine
3 grams crack, 10 grams/50 doses cocaine/narcotic/heroin/methamphetamine/hallucinogen, 25 kilos marijuana, or sale of any schedule I or II narcotic drug to a minor or in a school or park zone	6 grams crack, 50 grams/100 doses cocaine/heroin/methamphetamine/hallucinogen, 50 kilos marijuana	0-25 years imprisonment, 3 year minimum if prior drug felony; up to \$500,000 fine
crack/cocaine/narcotic/heroin, 5 kilos marijuana, or sale of any schedule I, II, or III drug (except aschedule I or II narcotic drug to a minor or employment of a minor to sell same)	3 grams crack, 10 grams/50 doses cocaine/narcotic/heroin/methamphetamine, 10 kilos marijuana, any amount of a schedule I or II narcotic drug in a school or park zone, or with intent to sell	0-20 years imprisonment, 2 year mandatory minimum if prior drug felony; up to \$250,000 fine
Any schedule I, II, or III drug (except marijuana) or sale of any schedule IV or V drug to a minor	10 doses hallucinogen, schedule I, II, or III (except marijuana with intent to sell)	0-15 years imprisonment, 1 year mandatory minimum if prior drug felony; up to \$100,000 fine
Marijuana, or any schedule IV drug	All schedule I, II, III or IV drugs except 1.5 oz. (42.5 grams) or less of marijuana	0-5 years imprisonment, up to \$10,000 fine; fine or 6 months mandatory minimum if prior drug felony
Drug-related offenses also include failure to purchase drug tax stamps, money laundering and racketeering, with a potential fine of three times gross profits.	<p>Possession of up to 1.5 oz. marijuana</p> <p>Second conviction of above within 2 years or failure to comply with sanctions above</p> <p>Possession of more than 1.4 grams of marijuana in automobile</p>	<p>Fine up to \$200 and required attendance at an approved drug education program</p> <p>Misdemeanor—drug treatment may be required</p> <p>Misdemeanor</p>

¹Penalties can change with each legislative session.

MINNESOTA CRIMES AND PENALTIES—ALCOHOL

Crime	Penalty
It is illegal to drive, operate, or be in physical control of a motor vehicle while under the influence of alcohol and/or a controlled or hazardous substance, or with an "alcohol concentration" of 0.10 or more. Motor vehicles include cars, boats, snowmobiles, ATVs, planes, etc. "Operate" or "in physical control" includes starting the motor, steering, or being in position to control a vehicle, including simply sitting or sleeping in a parked vehicle.	First offense (including juvenile convictions): misdemeanor—fine up to \$700, jail up to 90 days, driver's license revocation of at least 30 days. Second offense within 5 years or 2 or more convictions within 10 years: gross misdemeanor—fine up to \$3,000, jail up to 1 year, driver's license revocation of at least 30-90 days and possible chemical dependency treatment. Third or more offenses; longer periods of revocation.
Anyone under 21 years consuming or possessing alcoholic beverages with intent to consume, unless the person is in a parent or guardian's home and drinks with their permission. Possession anywhere other than a parent or guardian's home is prima facie evidence of intent to consume.	Misdemeanor
Selling, bartering, furnishing or giving alcoholic beverages to a person under 21 years old (except parents in their home).	Gross misdemeanor. Possible civil liability for damages caused by the person under 21 while under the influence.
Anyone under 21 years purchasing or attempting to purchase an alcoholic beverage, or claiming to be 21 or older for the purpose of purchasing alcoholic beverages.	Misdemeanor. Driver's license suspension of 90 days if a driver's license, permit, or MN identification is used in making or attempting the purchase.
Inducing a person under 21 years to purchase or procure alcoholic beverages or lending to or permitting use of identification by a person under the age of 21 for the purpose of purchasing or attempting to purchase alcoholic beverages.	Gross misdemeanor. Driver's license suspension of 90 days if a driver's license is lent.

A

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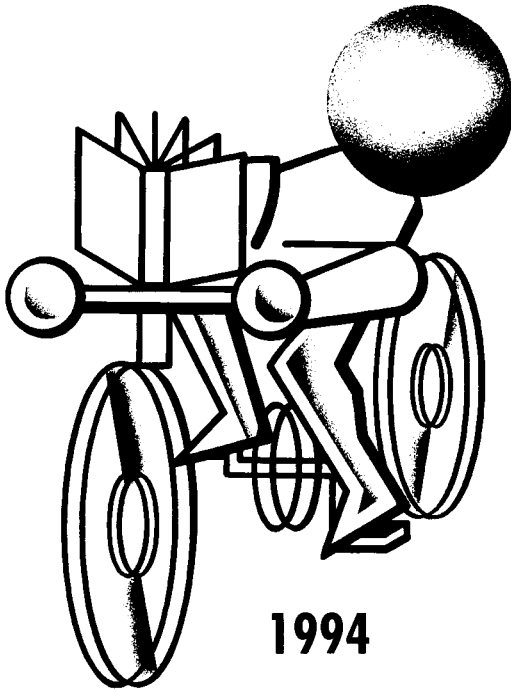
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