

The Bulletin of the
UNIVERSITY *of* MINNESOTA

Combined Class Schedule for 1942-1943

Volume XLV, Number 23

April 21, 1942

CONTENTS

	Page
University calendar	3-4
Directory of administrative offices	5
Directory of departmental offices	6
Explanations	7-8
Library Instruction	9-10
Military Science and Tactics.....	11
Naval Science and Tactics.....	12-13
Physical Education for Men	14, 136-137
Physical Education for Women	15-18, 138-140
College of Science, Literature, and the Arts.....	19-113
College of Education	114-140
College of Agriculture, Forestry, and Home Economics.....	141-162
School of Business Administration.....	163-173
Index	174

UNIVERSITY CALENDAR, 1942-43

Fall Quarter

1942			
September	14	Monday	Extension registration first semester begins
September	17	Thursday	Payment of fees closes for students in residence spring quarter in the Institute of Technology, Business Administration, Dentistry, Dental Hygiene, Law, Pharmacy, and Agriculture, Forestry, and Home Economics
September	21	Monday	Entrance tests
September	21-22		Registration for Freshman Week for all new students entering the freshman class
September	21-26		Examinations for removal of conditions Physical examinations Registration period, ¹ College of Science, Literature, and the Arts, and General College
September	23-26		Freshman Week
September	24-25		Registration days ¹ for all colleges not included above. Payment of fees closes for all students in Science, Literature, and the Arts, General College, Education, Public Health Nursing, Medical School, Medical Technology, Public Health, Physical Therapy, and for new students in other colleges except Graduate School
September	28	Monday	Fall quarter classes begin 8:30 a.m. ² First semester extension classes begin ³
October	3	Saturday	Last day for extension registration without penalty
October	10	Saturday	Last day for Graduate School registration and payment of fees
October	15	Thursday	Senate meeting, 4:30 p.m.
October	24	Saturday	Homecoming Day
November	3	Tuesday	Election Day; a holiday (except for extension)
November	7	Saturday	Dads Day
November	11	Wednesday	Armistice Day; a holiday (except for extension)
November	26	Thursday	Thanksgiving Day; a holiday
December	11-12 and 14-17		Final examination period
December	17	Thursday	Commencement Convocation Senate meeting, 4:30 p.m. Fall quarter ends 6:00 p.m. ⁴

Winter Quarter

December	24	Thursday	Payment of fees closes for all students in residence fall quarter in undergraduate colleges
1943			
January	4	Monday	Entrance tests Registration ¹ for new students in all colleges. Payment of fees closes for new students in all colleges except the Graduate School
January	5	Tuesday	Winter quarter classes begin 8:30 a.m. ²
January	16	Saturday	Last day for Graduate School registration and payment of fees
January	25	Monday	Extension registration second semester begins

¹ For footnotes, see page 4.

CALENDAR

February	6	Saturday	First semester extension classes close
February	8	Monday	Second semester extension classes begin ³
February	12	Friday	Lincoln's Birthday; a holiday (except extension)
February	13	Saturday	Last day for extension registration without penalty
February	18	Thursday	Charter Day Convocation Senate meeting, 4:30 p.m.
February	22	Monday	Washington's Birthday; a holiday
March 12-13 and	15-18		Final examination period
March	18	Thursday	Commencement Convocation Payment of fees closes for all students in residence winter quarter in undergraduate colleges Winter quarter ends 6:00 p.m.
<i>Spring Quarter</i>			
March	26	Friday	Entrance tests
March	26-27		Registration ¹ for new students in all colleges except the Institute of Technology. Payment of fees closes at 12:00 noon, March 27 for new students in all colleges except Graduate School
March	27	Saturday	Registration day for all students in the Institute of Technology
March	29	Monday	Spring quarter classes begin 8:30 a.m. ²
April	10	Saturday	Last day for Graduate School registration and payment of fees
April	23	Friday	Good Friday; a holiday (except for extension)
May	8	Saturday	Mothers Day
May	13	Thursday	Cap and Gown Day Convocation
May	20	Thursday	Senate meeting, 4:30 p.m.
May	31	Monday	Memorial Day; a holiday (except for extension)
June	4	Friday	Second semester extension classes close
June 4-5 and 7-11			Final examination period
June	6	Sunday	Baccalaureate service
June	11	Friday	Spring quarter ends 6:00 p.m.
June	12	Saturday	Seventy-first annual commencement
<i>Summer Session</i>			
June	14-15		Registration, first term. Payment of fees closes at 4:00 p.m. June 15 for all colleges
June	16	Wednesday	First term Summer Session classes begin 8:00 a.m.
July	5	Monday	Independence Day; a holiday
July	22	Thursday	Commencement Convocation
July	23	Friday	First term closes
July	26	Monday	Second term registration and payment of fees close at 4:00 p.m. July 26 for all colleges Second term classes begin 8:00 a.m.
August	27	Friday	Second term closes

¹ Registration subsequent to the date specified will necessitate the approval of the college concerned. See also privilege fees for late registration, page 46 Bulletin of General Information. No student will be allowed to register in the University after one week from the beginning of the quarter excepting in unusual cases wherein special circumstances shall justify the appropriate committee of the college concerned permitting registration at a later date.

² First hour classes begin at 8:15 a.m. at University Farm.

³ This date does not refer to correspondence study courses, which may be started at any time during the year.

⁴ Extension classes continue to Saturday, December 19, and will resume Monday, January 4, 1943.

DIRECTORY OF ADMINISTRATIVE OFFICES

ADMINISTRATION

Walter C. Coffey, M.S., LL.D., President.....	Adm202
Malcolm M. Willey, Ph.D., University Dean and Assistant to the President.....	Adm202
Anne Dudley Blitz, M.A., LL.D., Dean of Women.....	Adm120
Edmund G. Williamson, Ph.D., Dean of Students.....	Adm213
William S. Carlson, Ph.D., Director of Admissions and Records (on leave).....	Adm105
True E. Pettengill, M.S., Acting Director of Admissions and Records and Recorder.....	Adm105

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

John T. Tate, Ph.D., D.Sc., Dean and Professor of Physics.....	Adm219
T. Raymond McConnell, Ph.D., Associate Dean.....	Adm219
Joseph M. Thomas, Ph.D., Assistant Dean for the Senior College and Professor of English.....	F217
William H. Bussey, Ph.D., Assistant Dean for the Junior College and Professor of Mathematics.....	F106
Royal R. Shumway, B.A., Assistant Dean for Students' Work and Professor of Mathematics.....	Adm219

COLLEGE OF EDUCATION

Wesley E. Peik, Ph.D., Dean and Professor of Education.....	Bu204
G. Lester Anderson, Ph.D., Principal of the High School, Assistant Professor of Education, and Director of Training School.....	UHS105
Jean H. Alexander, M.A., Chairman of Students' Work Committee and Assistant Professor of Education.....	Bu206
Clifford P. Archer, Ph.D., Director of the Bureau of Recommendations and Assistant Professor of Education.....	Bu208

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

Clyde H. Bailey, Ph.D., Dean and Director of the Department of Agriculture.....	Ad(UF)201
Edward M. Freeman, Ph.D., Dean of the College of Agriculture, Forestry, and Home Economics.....	PP(UF)200

SCHOOL OF BUSINESS ADMINISTRATION

Russell A. Stevenson, Ph.D., LL.D., Dean.....	VH127
John J. Reighard, M.A., C.P.A., Assistant Dean and Professor of Accounting.....	VH104
J. Warren Stehman, Ph.D., Chairman of the Curriculum Committee and Professor of Economics and Finance.....	VH204
Bruce D. Mudgett, Ph.D., Chairman of the Graduate Committee and Professor of Economics and Statistics.....	VH320
Harry J. Ostlund, B.A., Chairman of the Students' Work Committee and Associate Professor of Accounting.....	VH104

DIRECTORY OF DEPARTMENTAL OFFICES

Administration (Educational) 202,224Bu	Latin 118F
Admissions and Records, Office	Library Methods 107Lib
of ; Main campus..... Adm105	Linguistics and Philology..... 118F
Admissions and Records, Office	Mathematics 119F
of ; University Farm..... 203dAd(UF)	Methods and Directed Teach-
Agricultural Biochemistry 214SnH(UF)	ing 105UHS,220,206Bu
Agricultural Economics 303aHH(UF)	Military Science and Tactics.... 106A
Agricultural Education 205Hr(UF)	Music 107Mu
Agricultural Engineering 201En(UF)	Music Education 107Mu
Agronomy and Plant Genetics	Natural Science (College of
308Ag(UF)	Education) 15UHS
Anatomy (Human) 201 IA	Natural Science (College of
Animal and Poultry Hus-	Science, Literature, and Arts) 148Ph
bandry 8LsPav(UF)	Naval Science and Tactics 203A
Anthropology 106WeH	Nursery School and Kinder-
Architecture 315E	garten Education 100CWI
Art Education 201J	Nursing Education 125MeS
Astronomy 359Ph	Philosophy 323F
Bacteriology 228MH	Physical Education for Men..... 208CH
Botany 209Bo	Physical Education for Women 101NGW
Business Administration 127VH	Physics 148Ph
Center for Continuation Study CCS	Physiology 318MH
Chemistry 127C	Plant Pathology and Botany.....
Child Welfare 101bPt	309PP(UF)
Classics 118F	Political Science 203Bu
Clinical Psychology 112Psy	Preventive Medicine and Public
Commercial Education 102UHS	Health 121MH
Dairy Husbandry 207HH(UF)	Professional Education of
Drawing and Descriptive Ge-	Teachers 216,220Bu
ometry 208E	Psychology 112Psy
Economics 127VH	Public Health Nursing 121MH
Educational Administration 224Bu	Publications and Rural Jour-
Educational Psychology 302Psy	nalism 113Ad(UF)
Educational Sociology 222Bu	Rhetoric 309En(UF)
Elementary Education 216,220Bu	Romance Languages 200dF
English 219F	Rural Sociology 202OD(UF)
Entomology and Economic Zo-	Russian 317F
ology 300Ad(UF)	Scandinavian 13F
Fine Arts 101J	School Health Work HS
Forestry 110GH(UF)	Secondary Education 218Bu
Geography 101aBu	Social Studies (College of Edu-
Geology and Mineralogy..... 108P	cation) 226Bu
German 210F	Sociology and Social Work..... 108J
Greek 118F	Soils 100aSo(UF)
History 102Bu	Speech 309aF
History of Education 206,226Bu	Supervision (College of Edu-
Home Economics 215HE(UF)	cation) 218,220Bu, 105UHS
Home Economics Education 215HE(UF)	Teachers of Subnormal Children 358Psy
Horticulture 111Hr(UF)	University Testing Bureau..... 101EdH
How To Study..... 250Psy	Veterinary Medicine 119Ve(UF)
Industrial Education 222Bu	Vocational Orientation 213Adm
Journalism 111MurH	Zoology 308Z

EXPLANATIONS

Course numbering.—A course is designated by a department name, a number, and a letter. It has the same number in whatever quarter it is offered. The quarter is indicated by letter (f, fall; w, winter; s, spring; su, summer).

Examples:

1f-2w, a two-quarter course given in the fall and winter.

1w-2s, the same course given in the winter and spring.

3f,w,s, a one-quarter course given each quarter.

Junior College courses in the College of Science, Literature, and the Arts (primarily for freshmen and sophomores) are numbered from 1 to 49. Senior College courses in the College of Science, Literature, and the Arts are numbered as follows: courses primarily for juniors and seniors, from 50 to 99; for juniors, seniors, and graduates, from 100 to 199; for graduates only, from 200 up. This system is not uniformly followed by departments in other colleges than Science, Literature, and the Arts.

Statement of credits.—The number of credits stated for two- and three-quarter courses is the number for the entire course, not the number for each quarter.

OTHER ABBREVIATIONS AND SYMBOLS

I, II, III, etc. Main campus, first hour (8:30 to 9:20), second hour (9:30 to 10:20), third hour (10:30 to 11:20), fourth hour (11:30 to 12:20), fifth hour (12:30 to 1:20), sixth hour (1:30 to 2:20), seventh hour (2:30 to 3:20), eighth hour (3:30 to 4:20), ninth hour (4:30 to 5:20).

University Farm, first hour (8:15 to 9:05), second hour (9:15 to 10:05), etc., to 1:05; sixth hour (1:30 to 2:20), etc.

Ar. To be arranged or assigned.

Aud. Auditorium.

Cred. Credits.

Lab. Laboratory.

Lect. Lecture.

MTWThFS Monday, Tuesday, etc.

Prereq. Prerequisite.

Rec. Recitation.

Sec. Section.

† To receive credit for any part of this course, a student must complete the parts preceding the dagger.

‡ There is a fee (amount to be specified) for this course.

A parenthetical statement after the title of each course gives the following information: the number of credits the course carries, the classes to whom it is open, and the courses prerequisite to it. *Abbreviated statement:* (5 cred.; jr., sr.; prereq. 6). *Expanded statement:* This course carries five credits, is open to juniors and seniors only, and has for a prerequisite, Course 6 in the same department.

Buildings

A, Armory

Ad, Administration, University Farm

Adm, Administration

Ag, Agronomy, University Farm

AgrBot, Agricultural Botany, University Farm

AH, Appleby Hall

BB, Bull Barn, University Farm

BCB, Beef Cattle Barn, University Farm

BFH, Botany Field House, University Farm

BeH, Berry House, University Farm

Bo, Botany	IA, Institute of Anatomy
BoG, Botany Greenhouse	J, Jones Hall
Bot, Botany, University Farm	L, Law Bldg.
BrH, Brewster Hall, University Farm	Lib, Library Bldg.
Bu, Burton Hall	LsPav, Livestock Pavilion, University Farm
C, Chemistry Bldg.	MB, Music Bldg., University Farm
CCS, Center for Continuation Study	ME, Mechanical Engineering
CH, Cooke Hall	MeH, Meredith Hall, University Farm
CMU, Coffman Memorial Union	MeS, Medical Sciences
CoH, Ada Comstock Hall	MEX, Mines Experiment Station
CS, Carpenter Shop, University Farm	MH, Millard Hall
CSP, Cold Storage Plant, University Farm	MNH, Museum of Natural History
CWI, Child Welfare Institute	MS, Machinery Shop, University Farm
DCB, Dairy Cattle Barn, University Farm	MSh, Meat Shop, University Farm
DeH, Dexter Hall, University Farm	Mu, Music Bldg.
DH, Dining Hall, University Farm	MurH, William J. Murphy Hall
DHD, Dining Hall Dormitory, University Farm	NGW, Norris Gymnasium for Women
E, Main Engineering	NMA, Northrop Memorial Auditorium
EdH, Eddy Hall	OD, Old Dairy, University Farm
EE, Electrical Engineering	OSL, Oak Street Laboratories
En, Engineering Bldg., University Farm	P, Pillsbury Hall
Ex, Experimental Engineering	Pe, Pendergast Hall, University Farm
F, Folwell Hall	PG, Poultry Group, University Farm
FCFH, Farm Crops Field House, University Farm	Ph, Physics
FdH, Field House	PH, Power House, University Farm
G, Greenhouse (13th and University Ave. S.E.)	PiH, Pioneer Hall
GH, Green Hall, University Farm	PoH, Louise M. Powell Hall
Gy, Gymnasium, University Farm	PP, Plant Pathology, University Farm
HB, Horse Barn, University Farm	Psy, Psychology
HE, Home Economics, University Farm	Pt, Pattee Hall
HH, Haecker Hall, University Farm	S, Stadium
HL, Hydraulics Laboratory, Hennepin Island	SaH, Sanford Hall
HoB, Home Building, University Farm	SB, Swine Barn, University Farm
Hospitals	SBH, State Board of Health
CI, Cancer Institute	SH, Seed House, University Farm
EH, Eustis Hospital	ShH, Shevlin Hall
EMH, Elliot Memorial Hospital	SnH, Snyder Hall, University Farm
HS, Health Service	So, Soils, University Farm
PW, Psychiatric Ward	SS, Storehouse and Shops
TM, Todd Memorial Hospital	St, Stock Pavilion, University Farm
UD, University Dispensary	TH, Thatcher Hall, University Farm
HP, Heating Plant	UHS, University High School
Hr, Horticulture, University Farm	VB, Veterinary Barn, University Farm
HS, Health Service	Ve, Veterinary, University Farm
HS, Health Service, University Farm	VH, Vincent Hall
	WeH, Westbrook Hall
	WeiH, Weigley House, University Farm
	WuH, Wulling Hall
	Z, Zoology Bldg.

LIBRARY INSTRUCTION

Library Methods 1 is not a part of the professional curriculum of the Division of Library Instruction. Library Methods 51 to 126 are professional courses open only to senior students or graduates (except as a minor open only to juniors in the College of Education). A full four-year course of preparation instead of three before taking the professional library courses is urged wherever practicable. The completion of a full year in Library Methods is accepted for graduation in the College of Science, Literature, and the Arts, the College of Education, and the University College. Senior students from other colleges may be admitted on approval by the dean of the college concerned and the director of the Division of Library Instruction.

The fees for Library Methods (51-126) are \$3.25 per credit hour or \$42 per quarter (\$4.50 per credit hour or \$54 per quarter for nonresidents). Students with programs in other colleges or divisions (except those registered in Library Methods 1), must pay the special fee for all library instruction courses taken.

A course for hospital library training is also given in the spring quarter. It includes 12 credit hours of class work, followed by six weeks of practice, or internship, in an approved hospital library. Candidates for admission to this special course must have completed satisfactorily (1) at least three years of approved college work and at least two quarters of work in an approved library school or an equivalent of approved experience in hospital library work, and (2) the following courses or their equivalents: Preventive Medicine and Public Health 50, Public and Personal Health, (3 credits); Psychology 1-2, General, (6 credits); Psychology 144-145, Abnormal Psychology, (6 credits); Sociology 1, Introduction to Sociology, (5 credits); Sociology 49, Social Pathology, (3 credits); Sociology 90, Survey of Social Work, (5 credits); Zoology 1-2-3, General Zoology, (10 credits). Students are advised to register only for the entire group of courses, and no candidates for a degree or special certificate will be excused from field observation and practice. Candidates for admission to this course should apply for the special bulletin giving more detailed information regarding the course.

A student working for an education minor must have completed eighteen credits from the following: 52f, 54f, 62w, 71w, 57s, 58s, and 64s.

For a library endorsement by the Minnesota State Department of Education a student must have completed nine credits from the list of those subjects required for a minor.

No.	Title	Hour	Day	Bldg.	Instructor
1f,w,s*	Use of Books and Libraries (2 cred.; fr., soph. only; no prereq.)				
	Sec. 1	II	MW	3Lib	Mr. Russell, Miss Moen
	2	IV	MW	3Lib	Mr. Shove, Miss Davenport

Professional Courses

51f	Bibliography (3 cred.; no prereq.)	III	MWF	5Lib	Mr. Shove
52f§	Cataloging (3 cred.; no prereq.)				
	Sec. 1 (Ed. students)	I	MWF	5Lib	Miss Hutchinson
	2	IV	MWF	5Lib	Miss Hutchinson

* For students in the College of Science, Literature, and the Arts. Others may obtain a special card from the Junior College office.

§ Required of all candidates for a degree in library methods.

LIBRARY INSTRUCTION

No.	Title	Hour	Day	Bldg.	Instructor
53w	Advanced Cataloging (3 cred.; prereq. 52)	IV	MWF	5Lib	Miss Hutchinson
54f§	Classification (3 cred.; no prereq.)	II	TThS	5Lib	Miss Hutchinson
55w	Advanced Classification (3 cred.; prereq. 54)	II	TThS	5Lib	Miss Hutchinson
57s	Secondary School Libraries (3 cred.; prereq. 9 cred. in library methods)	VIII	W	5Lib	Miss Greer
		I, IV	S		
58s	Public Library Administration (3 cred.; prereq. 9 cred. in library methods)	II	TThS	5Lib	Mr. Vitz
60f	Library Binding (1 cred.; no prereq.)	III	T	5Lib	Mr. Walter
61f,w,s§	Library Practice (3 to 4½ cred.; prereq. 15 cred. in library methods)	Ar	Ar	Ar	Mr. Walter
62w§	Reference (3 cred.; no prereq.)	III	MWF	5Lib	Miss Davenport
63s	Advanced Reference (3 cred.; prereq. 62)	III	MWF	5Lib	Miss Hutchinson
64s	Selection of Books for Adolescents (3 cred.; prereq. 9 cred. in library methods)	II	MWF	5Lib	Miss McGregor
67w	Library Printing (1 cred.; no prereq.)	III	T	5Lib	Mr. Walter
68s	Circulation Work (1 cred.; prereq. 9 cred. in library methods)	III	T	5Lib	Mr. Walter
69f	Current Library Problems (3 cred.; prereq. 9 cred. in library methods or with Lib. Meth. 51, 52, 54)	II	MWF	5Lib	Mr. Walter
70w	Current Library Problems (3 cred.; prereq. 69)	II	MWF	5Lib	Mr. Walter
71w	Library Work with Children (3 cred.; prereq. 9 cred. in library methods or 6 cred. and one 3-cred. course in library training with 71)	I	MWF	5Lib	Miss McGregor
72s	Library Work with Children (3 cred.; prereq. 71)	I	MWF	5Lib	Miss McGregor
73f	Selection of Books for Adults (2 cred.; no prereq.)	III	ThS	5Lib	Miss Hutchinson
74w	Selection of Books for Adults (2 cred.; prereq. 73)	III	ThS	5Lib	Miss Hutchinson
75s	Selection of Books for Adults (2 cred.; prereq. 73, 74)	III	ThS	5Lib	Miss Hutchinson
76s	Library Service in Hospitals (3 cred.)	I	TThS	3Lib	Miss Jones and others
77s	Book Selection for Hospital Patients (3 cred.)	IV	MWF	3Lib	Miss Methven and others
78s	Reading and the Mental Patient (2 cred.)	III	TS	3Lib	Miss Jones and others
79s	Medical Reference Work (3 cred.)	II	MWF	312Lib	Mr. Walter and others
80s*	Hospital Library Practice—A six-week internship in approved hospitals (4 cred.)				Miss Methven
126s	Subject Bibliography (3 cred.; prereq. sr. or grad. standing and bibliographical or research training or experience)	I	MWF	3Lib	Mr. Russell

* This practice will be a six-week internship in approved hospitals. The specific arrangements will be made by Miss Methven after the close of the class work early in June. This internship is required of all candidates for degrees or certificates.

§ Required of all candidates for a degree in library methods.

MILITARY SCIENCE AND TACTICS

(Coast Artillery Unit *Only*)

No.	Title	Hour	Day	Bldg.	Instructor
<i>Basic Courses</i>					
1f,2w*	First Year Basic Course (1 cred.; no prereq.)				
	Sec. 1	I	MWF	A	Ar
	2	III	MWF	A	Ar
	3	V	MWF	A	Ar
	4	VII	MWF	A	Ar
	5	IX	MWF	A	Ar
	6	I	TThS	A	Ar
3s*	First Year Basic Course (1 cred.; no prereq.)				
	Sec. 1	I	M	A	Ar
	2	III	M	A	Ar
	3	V	M	A	Ar
	4	VII	M	A	Ar
	5	IX	M	A	Ar
	6	I	T	A	Ar
	Leadership Sections				
	All students	V and IX	T	A	Ar
4f,5w*	Second Year Basic Course (1 cred.; soph.; prereq. 1, 2, 3, higher algebra and plane trigonometry)				
	Sec. 1	II	MWF	A	Ar
	2	IV	MWF	A	Ar
	3	VI	MWF	A	Ar
	4	VIII	MWF	A	Ar
	5	II	TThS	A	Ar
6s*	Second Year Basic Course (1 cred.; soph., prereq. same as 4f)				
	Sec. 1	II	M	A	Ar
	2	IV	M	A	Ar
	3	VI	M	A	Ar
	4	VIII	M	A	Ar
	5	II	T	A	Ar
	Leadership Sections				
	All students	V and IX	T	A	Ar

Note.—Students may register for Courses 1 to 6 and substitute playing in the band for regular military work, with the understanding that this choice renders them ineligible for the Advanced Courses. Premedical students should take First Basic Course in C.A.C. unit; Second Year Basic Course and Advanced Courses in Medical Unit are given in the Medical School.

Advanced Courses

151f-152w*	First Year Advanced Course (3 cred. per qtr.; prereq. 4, 5, 6)				
	Sec. 1	II	MTWThF	A	Ar
	2	IV	MTWFS	A	Ar
	3	V	TTh	A	Ar
		VI	MWF	A	Ar
153s*	First Year Advanced Course (3 cred.; prereq. 4, 5, 6) Total of five hours to be taken as follows:				
	All students	V, IX	T	A	Ar
	Sec. 1	II	MWF	A	Ar
	2	IV	MWF	A	Ar
	3	VI	MWF	A	Ar
154-155w*	Second Year Advanced Course (3 cred.; prereq. 151-152, 153) Total of five hours to be taken as follows:				
	Sec. 1	III	MTWThF	A	Ar
	2	V	MTWThF	A	Ar
156s*	Second Year Advanced Course (3 cred.; prereq. 54-55) Total of five hours to be taken as follows:				
	All students	V, IX	T	A	Ar
	Sec. 1	III	MWF	A	Ar
	2	V	MWF	A	Ar

Note.—The general rule regarding credit for the Advanced Courses is: "Three credits per quarter will be allowed for work in the advanced R.O.T.C. courses with a maximum of 18 quarter credits for the two-year course.

* Offered on the Main campus.

NAVAL SCIENCE AND TACTICS

NAVAL SCIENCE

No.	Title	Hour	Day	Bldg.	Instructor
<i>Basic Courses</i>					
1f	First Year Basic (1½ cred.; no prereq.)				
	Sec. 1	III	MWF	A	Ar
	2	VI	MWF	A	Ar
	3	VII	MWF	A	Ar
	4	VIII	MWF	A	Ar
2w	First Year Basic (1½ cred.; prereq. 1f)				
	Sec. 1	III	MW	A	Ar
	2	VI	TTh	A	Ar
	3	VII	TTh	A	Ar
	4	VIII	WF	A	Ar
	<i>All sections drill</i>	V	T	A	
3s	First Year Basic (1½ cred.; prereq. 2w)				
	Sec. 1	I	TTh	A	Ar
	2	III	TTh	A	Ar
	3	VII	MW	A	Ar
	4	VII	Th	A	Ar
		III	S	A	Ar
	<i>All sections drill</i>	IX	T	A	Ar
4f	Second Year Basic (1½ cred.; prereq. 3s)				
	Sec. 1	II	TThS	A	Ar
	2	IV	MWF	A	Ar
	3	VIII	MWF	A	Ar
5w	Second Year Basic (1½ cred.; prereq. 4f)				
	Sec. 1	II	TTh	A	Ar
	2	IV	MT	A	Ar
	3	VII	MW	A	Ar
	<i>All sections drill</i>	V	T	A	
6s	Second Year Basic (1½ cred.; prereq. 5w)				
	Sec. 1	I	TTh	A	Ar
	2	II	T	A	Ar
		III	S	A	Ar
	3	VI	TTh	A	Ar
	<i>All sections drill</i>	IX	T	A	
<i>Advanced Courses</i>					
NON-ENGINEERING STUDENTS					
51f	First Year Advanced (3 cred.; prereq. 6s)				
	Sec. 1	I	MWF	A	Ar
		II	S	A	Ar
	2	IV	T	A	Ar
		VII	TTh	A	Ar
		II	S	A	Ar
52w	First Year Advanced (3 cred.; prereq. 51f)				
	Sec. 1	IV	T	A	Ar
		I	WF	A	Ar
		V	T	A	Ar
	2	IV	TWF	A	Ar
		V	T	A	Ar
53s	First Year Advanced (3 cred.; prereq. 52w)				
	Sec. 1	IV	M	A	Ar
		I	WF	A	Ar
		IX	T	A	Ar
	2	IV	MWF	A	Ar
		IX	T	A	Ar
54f	Second Year Advanced (3 cred.; prereq. 53s)				
	Sec. 1	II	TTh	A	Ar
		VII	TTh	A	Ar
	2	IV	TS	A	Ar
		V	Th	A	Ar
		VII	Th	A	Ar

No.	Title	Hour	Day	Bldg.	Instructor
55w	Second Year Advanced (3 cred.; prereq. 54f)				
	Sec. 1	II	TTh	A	Ar
		VII	TTh	A	Ar
	2	I	MT	A	Ar
		V	Th	A	Ar
56s	Second Year Advanced (3 cred.; prereq. 55w)				
	Sec. 1	II	TTh	A	Ar
		IX	T	A	Ar
		VII	Th	A	Ar
	2	VI	MW	A	Ar
	IX	T	A	Ar	
	VII	Th	A	Ar	

STUDENTS WITH ENGINEERING MAJOR

61f	First Year Advanced (2 cred.; prereq. 6s)				
	Sec. 1	I	MWF	A	Ar
	2	IV	T	A	Ar
62w	First Year Advanced (2 cred.; prereq. 61f)				
	Sec. 1	I	WF	A	Ar
		V	T	A	Ar
	2	IV	WF	A	Ar
		V	T	A	Ar
63s	First Year Advanced (2 cred.; prereq. 62w)				
	Sec. 1	I	WF	A	Ar
		IX	T	A	Ar
	2	IV	WF	A	Ar
	IX	T	A	Ar	
64f	Second Year Advanced (2 cred.; prereq. 63s)				
	Sec. 1	II	TTh	A	Ar
		VII	T	A	Ar
	2	IV	TS	A	Ar
	V	Th	A	Ar	
65w	Second Year Advanced (2 cred.; prereq. 64f)				
	Sec. 1	II	TTh	A	Ar
		VII	T	A	Ar
	2	I	MT	A	Ar
		V	Th	A	Ar
66s	Second Year Advanced (2 cred.; prereq. 65w)				
	Sec. 1	II	TTh	A	Ar
		IX	T	A	Ar
	2	VI	MW	A	Ar
	IX	T	A	Ar	

NAVIGATION

1f or 1s	Elementary Navigation and Piloting (3 cred.; prereq. high school trig.)				
	1f Sec. 1	VI	MWF	A	Ar
	2	VII	MWF	A	Ar
	1s Sec. 1	I	MWF	A	Ar
	2	IV	MWF	A	Ar
2f or 2w	Celestial Navigation (3 cred.; prereq. 1f or 1s)				
	2f Sec. 1	I	MWF	A	Ar
	2	IV	MWF	A	Ar
	2w Sec. 1	I	MWF	A	Ar
	2	VI	MWF	A	Ar
3w or 3s	Deep Sea and Aerial Navigation (3 cred.; prereq. 2f or 2w)				
	3w Sec. 1	IV	MWF	A	Ar
	2	VII	MWF	A	Ar
	3s Sec. 1	VI	MWF	A	Ar
	2	VII	MWF	A	Ar

PHYSICAL EDUCATION FOR MEN

Major advisers.—Associate Professors Keller and Nordly; Assistant Professor Piper.

The courses in sports education are offered for the purpose of providing instruction and practice in sports of a recreational nature in which men may participate during present and future years for more enjoyable living. The status of these courses in the various college is:

1. **College of Education**—(All except majors and minors in physical education) required with credit.
2. **General College**—Required.
3. **The Institute of Technology**—Elective with credit if taken for three quarters.
4. **College of Agriculture, Forestry, and Home Economics**—Elective with credit.
5. **University College**—Elective with credit.
6. **College of Pharmacy**—Required of students low on fitness test. Credits as recommended by the dean.
7. **All other colleges**—Elective without credit.

A towel and locker fee of \$1.25 per quarter is charged all students using physical education facilities for activity. Uniforms for class work or recreational activity are \$1 per quarter.

The facilities of the Department of Physical Education, including the golf course, tennis courts, gymnasiums, swimming pools, handball and squash courts, golf gymnasium, table tennis room, and playing fields, are available for use by the general student body. All men are invited to participate in some form of physical activity. For information regarding the intramural and intercollegiate athletic programs see the handbook published by the Department of Physical Education for Men or inquire at Cooke Hall.

For specialized curriculum in Physical Education for Men, see College of Education Bulletin.

SPORTS EDUCATION

Supervisor of Sports Education.—R. A. Piper.

Survey Courses

1f,2w,3s	Sports Education (1 cred.* per qtr.; all; no prereq.)			
	II	MWF	CH	Mr. Boyce,
	III	MWF		Mr. Brain,
	IV	MWF		Mr. Mac-
	VI	MWF		Millan,
				Mr. Thorpe
	Fall: Touchball, Swimming, Volleyball, Badminton			
	Winter: Boxing, Wrestling, Basketball, and Golf			
	Spring: Soft Ball, Tennis, Handball, Squash, and Track			

Specialized Courses

Beginning Swimming	{	II	MWF	
		VI	MWF	Mr. Thorpe,
Intermediate Swimming		II	TThS	Mr. Boyce
Advanced Swimming		III	MWF (w,s)	
Lifesaving		III	TThS	
Boxing		VIII	MWF (f,w)	Mr. Chisholm
		IX	MWF	
Badminton		VI	MWF (w)	Mr. Brain
Tennis		VII	MWF (s)	Mr. Brain
Individual Physical Education		III	MWF 246S	Mr. Osell
Activities (by permission of instructor only)		IV	MWF	
		VIII	MWF (f,w)	
		VII	MWF (s)	
Body Building		IX	MWF	Mr. Osell

Substitution of athletic team practice may be allowed by the department on the basis of achievement on the introductory tests.

Note.—For professional courses in major and minor curricula in Physical Education for Men, see page 136.

* For colleges offering credit, see list above.

PHYSICAL EDUCATION FOR WOMEN

Major advisers.—Associate Professors Baker and Kissock.

The General Course in Physical Education offered by the Department of Physical Education for Women provides a wide program of sports and other activities to meet the varying interests and needs of all the women students. The program offers an opportunity to take courses for the purpose of body building and physical fitness and for the acquisition of personal and recreational skills.

The status of these courses in the various colleges for which these courses are offered is as follows:

1. **College of Education**—Requirement: 6 quarters, total of five credits, i.e., 1 credit each for three freshman quarters and $\frac{2}{3}$ credit each for three sophomore quarters.
2. **General College**—Requirement: 3 quarters.
3. **College of Agriculture, Forestry, and Home Economics**—Required: 3 quarters chosen from Phys. Ed. 1, 2, 3, 4, 5, 6, and 8, one credit each per quarter. This requirement may be completed any time during the period of residence.
4. **School of Dentistry; Dental Hygienists**—Requirement: 3 quarters of activity.
5. **All other colleges**—Elective without credit.

Note.—For professional courses in major and minor curricula in Physical Education for Women, see page 138.

Statement of fees.—A physical education fee of \$1.75 per quarter is charged for all starred courses. Maximum fee per student, \$3.50 per quarter. For Methods and Directed Teaching courses a fee of \$1 per credit is charged as indicated in the footnote.

The facilities of the Department of Physical Education for Women, including an 18-hole golf course, tennis courts, three gymnasiums, two swimming pools, squash court, large indoor sports room, outdoor playing fields, are available for use by all women students.

No.	Title	Hour	Day	Bldg.	Instructor
1f,2w,3s, 4f,5w,6s*†	College Program in Physical Education				

Aquatics

Canoeing (classes limited to 15)					
	Sec. 1 (fall, spring)	IV	MW	58NGW	Ar
	2 (spring)	II	TTh	58NGW	Ar
Swimming, Beginning‡					
	Sec. 1 (fall, spring)	II	TTh	51NGW	Ar
	2 (fall, spring)	III	TTh	51NGW	Ar
	3 (fall, spring)	VI	TTh	51NGW	Ar
	4 (winter, spring)	IV	MW	51NGW	Ar
	5 (spring)	VI	MW	51NGW	Ar
Swimming, Advanced Beginning**					
	Sec. 1 (fall)	IV	MW	51NGW	Ar
	2 (winter)	III	TTh	51NGW	Ar
	3 (winter, spring)	VIII	TTh	51NGW	Ar
Swimming, Intermediate					
	Sec. 1 (fall, winter, spring)	VIII	MW	51NGW	Ar
	2 (fall, spring)	VIII	TTh	51NGW	Ar
Swimming, Advanced					
	Sec. 1 (fall, winter)	VIII	MW	58NGW	Ar
	2 (fall, winter)	VIII	TTh	58NGW	Ar

* A physical education fee of \$1.75 per quarter is charged for this course.

† Students must report to the Norris Gymnasium for Women on either of the first two days of each quarter to be placed in the proper class section. This is in addition to the regular registration.

‡ For students with no experience in swimming.

** For students with some experience in swimming.

PHYSICAL EDUCATION FOR WOMEN

No.	Title	Hour	Day	Bldg.	Instructor
<i>Aquatics—Continued</i>					
1f,2w,3s, 4f,5w,6s*†	College Program in Physical Education—Continued Swimming, Advanced and Diving (spring)	VII	MW	58NGW	Ar
	Swimming, Advanced and Synchronized (spring)	VIII	MW	58NGW	Ar
	Senior Life Saving				
	Sec. 1. (fall, spring)	VI	TTh	58NGW	Ar
	2 (spring)	IX	MW	58NGW	Ar
	Preliminary Water Safety Instructors' Course‡ (winter)	VI	MW	58NGW	Ar

Rhythms

	Country Dancing				
	Sec. 1 (fall)	III	TTh	153NGW	Ar
	2 (winter)	II	MW	151NGW	Ar
	Folk Dancing				
	Sec. 1 (fall)	II	MW	151NGW	Ar
	2 (winter)	III	TTh	153NGW	Ar
	Modern Dance, Elementary				
	Sec. 1 (fall, winter, spring)	VI	MW	151NGW	Ar
	2 (fall)	III	TTh	151NGW	Ar
	Modern Dance, Intermediate (fall, winter, spring)	VII	TTh	151NGW	Ar
	Modern Dance, Advanced				
	Sec. 1 (winter)	III	TTh	151NGW	Ar
	2 (spring)	III	MW	151NGW	Ar
	Social Dancing, Elementary§				
	Sec. 1 (fall, winter)	III	MW	151NGW	Ar
	2 (fall)	IV	MW	151NGW	Ar
	Social Dancing, Intermediate§				
	Sec. 1 (fall, winter)	VI	TTh	151NGW	Ar
	2 (fall)	VIII	TTh	153NGW	Ar
	Tap Dancing, Elementary (winter)	IV	MW	151NGW	Ar

Individual Sports and Activities

	Archery, Elementary				
	Sec. 1 (fall)	I	MW	60NGW	Ar
	2 (winter)	I	TTh	60NGW	Ar
	3 (spring)	III	TTh	60NGW	Ar
	4 (fall, spring)	IV	MW	60NGW	Ar
	5 (fall)	VI	MW	60NGW	Ar
	6 (fall, winter, spring)	VI	TTh	60NGW	Ar
	7 (winter)	VII	TTh	60NGW	Ar
	Archery, Intermediate				
	Sec. 1 (fall, winter)	III	MW	60NGW	Ar
	2 (spring)	II	TTh	60NGW	Ar
	3 (winter, spring)	VIII	MW	60NGW	Ar
	Badminton, Elementary				
	Sec. 1 (fall)	IV	MW	153NGW	Ar
	2 (fall)	VIII	TTh	60NGW	Ar
	3 (winter)	I	MW	60NGW	Ar
	4 (winter)	VI	MW	153NGW	Ar
	5 (spring)	VI	TTh	153NGW	Ar
	6 (spring)	III	MW	153NGW	Ar

* A physical education fee of \$1.75 per quarter is charged for this course.

† Students must report to the Norris Gymnasium for Women on either of the first two days of each quarter to be placed in the proper class section. This is in addition to the regular registration.

‡ This course covers the review required by the Red Cross for all candidates for the rank of water safety instructor.

§ Open to men students.

No.	Title	Hour	Day	Bldg.	Instructor
<i>Individual Sports and Activities—Continued</i>					
1f,2w,3s, 4f,5w,6s*†	College Program in Physical Education—Continued				
	Badminton, Intermediate				
	Sec. 1 (fall)	II	TTh	60NGW	Ar
	2 (fall, winter)	VI	TTh	153NGW	Ar
	Bowling				
	Sec. 1 (fall, winter, spring)	II	MW	151NGW	Ar
	2 (fall, winter, spring)	III	MW	151NGW	Ar
	3 (winter)	II	TTh	151NGW	Ar
	4 (winter)	III	TTh	151NGW	Ar
	Golf, Elementary¶				
	Sec. 1 (fall)	VIII	MW	60NGW	Ar
	2 (winter)	III	TTh	60NGW	Ar
	3 (winter)	VIII	TTh	60NGW	Ar
	4 (spring)	I	MW	60NGW	Ar
	5 (spring)	III	MW	60NGW	Ar
	Golf, Intermediate¶				
	Sec. 1 (winter)	IV	MW	60NGW	Ar
	2 (spring)	VI	MW	60NGW	Ar
	3 (spring)	VIII	TTh	60NGW	Ar
	Golf, Advanced¶ (winter, spring)	Ar	Ar	Ar	Ar
	Horseback Riding (fall, spring)	(See courses for which no physical education fee is charged, p. 18)			
	Individual Body Building				
	Sec. 1 (fall)	IV	MW	153NGW	Miss Kelly
	2 (fall)	VI	MW	153NGW	Miss Kelly
	3 (fall)	VI	TTh	153NGW	Miss Kelly
	4 (winter)	II	MW	153NGW	Miss Kelly
	5 (winter)	II	TTh	153NGW	Miss Kelly
	6 (winter)	III	TTh	153NGW	Miss Kelly
	7 (spring)	III	TTh	153NGW	Miss Kelly
	Rifle Marksmanship (spring)				
	Sec. 1	II	MW	151NGW	Ar
	2	VII	MW	151NGW	Ar
	Skating, Plain and Figure§ (winter)				
	Sec. 1	VI	W	151NGW	Ar
	2	VII	W	151NGW	Ar
	3	VIII	W	151NGW	Ar
	4	VI	Th	151NGW	Ar
	5	VII	Th	151NGW	Ar
	6	VIII	Th	151NGW	Ar
	7	VI	F	151NGW	Ar
	8	VII	F	151NGW	Ar
	9	VIII	F	151NGW	Ar
	Skiing§¶ (winter)				
	Sec. 1	VI	F	151NGW	Ar
	Tennis, Intermediate and Advanced†‡§ (winter)				
	Sec. 1§ (fall, winter)	IV	F	151NGW	Ar
	2§ (fall, winter)	VI	F	151NGW	Ar
	3 (spring)	I	MW	151NGW	Ar
	4 (spring)	II	MW	151NGW	Ar
	5 (spring)	II	TTh	151NGW	Ar
	6 (spring)	III	TTh	151NGW	Ar
	7 (spring)	VI	MW	151NGW	Ar
	Tennis, Intermediate‡ (spring)				
	Sec. 1	I	TTh	151NGW	Ar
	2	II	MW	151NGW	Ar
	3	III	MW	151NGW	Ar

* A physical education fee of \$1.75 per quarter is charged for this course.

† Students must report to the Norris Gymnasium for Women on either of the first two days of each quarter to be placed in the proper class section. This is in addition to the regular registration.

‡ Students taking tennis must pay \$.50 toward a tennis permit.

§ Class meets for one hour.

¶ Students must supply their own equipment.

No.	Title	Hour	Day	Bldg.	Instructor
-----	-------	------	-----	-------	------------

Individual Sports and Activities—Continued

1f,2w,3s, 4f,5w,6s*†	College Program in Physical Education—Continued Tennis, Intermediate and Advanced††§ (winter)	VIII	F	151NGW	Ar
	Tennis, Advanced (spring)	IV	MW	151NGW	Ar

Team Sports and Activities

	Basketball, Elementary (winter)				
	Sec. 1	VI	MW	153NGW	Ar
	2	VIII	MW	153NGW	Ar
	Basketball, Intermediate (winter)	II	TTh	60NGW	Ar
	Posture and Daily Life Skills (fall)				
	Fundamental Sports Skills	I	MW	151NGW	Ar
	Sec. 1 (fall)	III	MW	153NGW	Ar
	2 (winter)	IV	MW	153NGW	Ar
	Softball (spring)	VI	TTh	151NGW	Ar
	Team Sports Officiating				
	Fall—Volleyball; Winter— Basketball; Spring—Softball	IV	TS	151NGW	Ar
	Volleyball				
	Sec. 1 (fall)	IV	MW	153NGW	Ar
	2 (fall)	VI	MW	153NGW	Ar
	3 (winter)	II	MW	153NGW	Ar

College Program Courses for Which No Physical Education Fee Is Charged

7f,w,s	Lectures in Health and Physical Education				
	Sec. 1 (fall, winter, spring)	III	TTh	201NGW	Ar
	2 (fall)	II	TTh	201NGW	Ar
	3 (fall, winter)	VI	MW	201NGW	Ar
8f,s†§	Horseback Riding (fall, spring)				
	Sec. 1 (Beginning)	VII	MW	151NGW	Ar
	• 2 (Beginning)	VI	TTh	151NGW	Ar
	3 (Intermediate and Advanced)	VI	MW	151NGW	Ar
	4 (Intermediate and Advanced)	VII	TTh	151NGW	Ar

Elective Courses

54s*	Camp Leadership (2 cred.; no prereq.)	IV and 1 hr ar	MW	201NGW	Ar
80w	Principles of Rhythm (2 cred.; prereq. some rhythm experience)	II	WF	201NGW	Ar

Recreational Activities for Which No Registration Is Required

<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Archery	Archery	Archery
Badminton	Badminton	Badminton
Bowling	Basketball	Golf
Fencing	Bowling	Horseback Riding
Horseback Riding	Fencing	Softball
Rifle Marksmanship	Rifle Marksmanship	Swimming
Swimming	Social Dancing	Tennis
Volleyball	Swimming	
	Volleyball	
	Winter Sports	

* A physical education fee of \$1.75 per quarter is charged for this course.

† Students must report to the Norris Gymnasium for Women on either of the first two days of each quarter to be placed in the proper class section. This is in addition to the regular registration.

‡ Students pay \$.50 per lesson. Students should have a free hour after the riding class.

†† Students taking tennis must pay \$.50 toward a tennis permit.

§ Class meets for one hour.

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

The College of Science, Literature, and the Arts distinguishes between Junior College courses, intended primarily for freshmen and sophomores, and Senior College courses, intended primarily for juniors and seniors.

Senior College courses appear in the announcement as open to "juniors and seniors" or to "juniors, seniors, and graduates."

Some Senior College courses are regularly open to Junior College students who have an average grade of at least C in the prerequisite courses. They are listed beneath the heading *Senior College Courses* in departmental statements in the Science, Literature, and the Arts section of this Combined Class Schedule Bulletin. Other Senior College courses are open to Junior College students only by special permission of the Students' Work Committee. The committee will usually grant such permission to students who have an average grade of at least C in all their work and in the prerequisite courses. Requests for the special permission should be presented to Assistant Dean Bussey in 106 Folwell Hall. Courses which carry graduate credit may not be taken earlier than the third quarter of the student's sophomore year.

ANATOMY (HUMAN)

MEDICAL SCHOOL

For complete list of courses, see the Bulletin of the Medical School.

Students in this college may elect courses in human anatomy other than Course 3 (see the Bulletin of the Medical School) only by arrangement with the head of the Department of Anatomy.

No.	Title	Hour	Day	Bldg.	Instructor
3f,s	Elementary Anatomy (3 cred.; primarily for nurses; all; no prereq.)				
	Schedule for 3f (Only Section D* is open to students not registered in the School of Nursing)				
	Lect.	Sec. A,B C,D,E	I VI	M Ar T Ar	Mr. Kirchbaum Mr. Kirchbaum
	Lab. and Rec.	Sec. A B C D E	I, II, III II, III, IV VII, VIII, IX VI, VII, VIII VII, VIII, IX	T Ar T Ar T Ar Th Ar Th Ar	Mr. Kirchbaum and others
	Schedule for 3s (Only Section D* is open to students not registered in the School of Nursing)				
	Lect.	Sec. C,D	VI	T Ar	Mr. Blount
	Lab. and Rec.	Sec. C D	VII, VIII, IX VI, VII, VIII	T Ar Th Ar	Mr. Blount and others

ANTHROPOLOGY

Major adviser in the College of Science, Literature, and the Arts.—Professor Wallis.

Major sequence in the College of Science, Literature, and the Arts.—At least twenty-seven credits selected from the following: Anthropology courses numbered 80 or above, Zoology 83, 170-171.

(Prerequisites: Course 40, 41, or 42, with fifteen additional credits from either the social or biological sciences.)

* Science, Literature, and the Arts students who cannot take Section D may possibly get permission to enter one of the other sections. They should ask for permission in 106 Folwell Hall.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
40f	Introduction to Anthropology—Man's physical and cultural development; the nature and significance of race differences; ways of life in primitive society; applications of anthropology to modern life (5 cred.; all; no prereq.)	VI	MTWThF	2P	Mr. Mandelbaum
41w	Introduction to Anthropology—Culture areas and culture traits (5 cred.; all; no prereq.)	VI	MTWThF	206Pt	Mr. Wallis
42s	The Growth of Cultures—Man's first appearance in Old and New Worlds; earliest stages in the development of civilization; discovery and invention, the formation of cultural patterns, and the spread and adaptation of culture to various environments in Asia, Africa, the South Seas, and among the American Indians; changes in the arts, beliefs, and institutions of primitive communities as observed in recent times (5 cred.; all; no prereq.)	VI	MTWThF	166Ph	Mr. Cline

Senior College Courses

Courses 54, 56, 80 are open to sophomores who have a grade of at least C in Courses 40, 41, or 42. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

54s	Social Organization—An analysis and survey of forms of social life (3 cred.; jr., sr.; no prereq.)	I	MWF	6WeH	Mr. Wallis
56f	Primitive Science—The beliefs and knowledge of primitive man (3 cred.; jr., sr.; no prereq.)	VI	MWF	6WeH	Mr. Wallis
80w	The American Indian—A survey of native cultures of the New World. Physical and cultural characteristics (3 cred.; jr., sr.; no prereq.)	IV	MWF	6WeH	Mr. Wallis
105f	Elements of Language—A survey of speech sounds followed by practice in phonetic recording. Analysis of phonetic patterns in language. Practical work in dictation of Chippewa; Dakota, Finnish, and other languages (3 cred.; jr., sr., grad.; no prereq.)	II	MWF	6WeH	Mr. Mandelbaum
106f	European Prehistory (3 cred.; jr., sr., grad.; no prereq.)	I	TThS	6WeH	Mr. Cline
110f	Physical Anthropology—Man's place in the animal kingdom. Comparison of man's structure with that of the anthropoid apes; types of prehistoric men; anthropometry (3 cred.; jr., sr., grad.; no prereq.)	III	MWF	6WeH	Mr. Wallis
116s	Indians of the Southwest—The pueblo dwellers, Navaho, Apache, and other aborigines of New Mexico and Arizona. The ancient civilizations of the region. (3 cred.; jr., sr., grad.; no prereq.)	I	TThS	6WeH	Mr. Mandelbaum
118w	Indian Civilizations of Mexico and Peru (3 cred.; jr., sr., grad.; no prereq.)	I	TThS	6WeH	Mr. Cline
119s	The Contact of Cultures—An examination of the ways in which customs change, especially as exemplified by the impact of Western civilization on native societies (3 cred.; jr., sr., grad.; no prereq.)	III	TThS	6WeH	Mr. Mandelbaum
120	<i>Indians of the Plains</i> —The aboriginal inhabitants of the prairies and plains. The tribes which lived between the Upper Mississippi and the Rockies, from the forests of western Canada to Texas (3 cred.; jr., sr., grad.; no prereq.) (<i>Not offered</i>)				
122f-123w-124s	Problems in Anthropology (Cred. ar.; jr., sr., grad.; prereq. permission of instructor)	Ar	Ar	Ar	Mr. Wallis, Mr. Cline, Mr. Mandelbaum

No.	Title	Hour	Day	Bldg.	Instructor
131w-132s*	Races and Cultures of Arabia, Egypt, and North Africa—Course 131: Pre-Muslim Culture. Course 132: Muslim Culture (6 cred.; jr., sr., grad.; no prereq.)				
		III	MWF	6WeH	Mr. Cline
133f-134w*	Races and Cultures of the Far East—This course will focus on the growth of native civilization in China and Japan. Attention will be given also to the cultures of Mongolia, Tibet, Korea, and southeastern Asia, especially in their relation to the Chinese (6 cred.; jr., sr., grad.; no prereq.)				
		I	MWF	6WeH	Mr. Cline
135f-136w-137s†	Cultural History of Egypt from the Earliest Times to the Sixteenth Century A.D. (9 cred.; jr., sr., grad.; prereq. permission of instructor and a B average in the student's major subject)				
		VIII-IX	W	Ar	Mr. Cline, Mr. Jones
140§	Field Trip in Archeology (1 to 8 cred.; jr., sr., grad.; no prereq.)				
		Ar	Ar	Ar	Ar
150-151-152†	<i>Selected Readings in Ancient History</i> —Early cultures of the Mediterranean Basin (The same as History 150-151-152) (9 cred.; sr., grad.; prereq. consent of instructor) (Not offered)				
161s	Primitive Religion—Beliefs and practices in primitive religion. The role of the sacred and the supernatural. Beliefs in the life after death (3 cred.; jr., sr., grad.; no prereq.)				
		II	MWF	6WeH	Mr. Wallis
163w	Ethnology of India—A survey of the primitive tribes, Hindu caste society, and Mohammedan communities in India (3 cred.; jr., sr., grad.; no prereq.)				
		III	TThS	6WeH	Mr. Mandelbaum
165w	Psychological Phases of Culture—The interplay between culture and personality (3 cred.; jr., sr., grad.; no prereq.)				
		II	MWF	6WeH	Mr. Mandelbaum
166w	History of Anthropological Theory and Method—A review of the development of anthropology from early times to the present day. Schools of anthropological thought and various approaches to the data of anthropology (3 cred.; jr., sr., grad.; no prereq.)				
		II	TThS	6WeH	Mr. Mandelbaum
167s	Primitive Mythology—Plots and motives in folklore and mythology. Mythology as a reflection of culture and interests. Explanatory tales (3 cred.; jr., sr., grad.; no prereq.)				
		II	TThS	6WeH	Mr. Wallis
168f	Ethnology of Australia—Physical types and cultures (3 cred.; jr., sr., grad.; no prereq.)				
		IV	MWF	6WeH	Mr. Wallis
169f	Peoples of the South Seas—A survey of the native cultures of the Pacific Islands (3 cred.; jr., sr., grad.; no prereq.)				
		III	TThS	6WeH	Mr. Cline
170s	Primitive Art—The role of esthetics in primitive life, the spread of art styles, symbolism. The graphic and plastic arts and the place of the artist. Music, drama, the dance, in primitive societies (3 cred.; jr., sr., grad.; no prereq.)				
		IV	MWF	6WeH	Mr. Mandelbaum

For Graduate Students Only

204f-205w-206s	Seminar in Anthropology (3 cred. per qtr.; grad.)				
		Ar	Ar	Ar	Mr. Wallis, Mr. Cline, Mr. Mandelbaum

ARCHITECTURE

INSTITUTE OF TECHNOLOGY

Major adviser in the College of Science, Literature, and the Arts.—Professor Roy Jones.

Major sequence in the College of Science, Literature, and the Arts.—Courses AD-II, 51-52-53, 57-58-59.

* Students may enter either quarter.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ This course may be taken for credit only once.

(Prerequisites: Courses 4-5-6, AD-I, DP-I, DP-II¶)

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Junior College Courses

Note.—Consult the Bulletin of the Institute of Technology for program of hours, days, buildings, and instructors.

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w-3s	Introduction to Architecture (3 cred.; open only to students whose major subject is architecture; no prereq.)				
4f-5w-6s	Graphic Representation (6 cred.; soph.; no prereq.)				
DP-If,w,s†§	Drawing and Painting, Grade I (6 cred., normally 2 cred. per qtr.; all; no prereq.)				
DP-IIf,w,s†§	Drawing and Painting, Grade II (6 cred., normally 2 cred. per qtr.; soph., jr., sr.; prereq. DP-I)				
M-If,w,s†§	Modeling, Grade I (6 cred., normally 2 cred. per qtr.; all; no prereq.)				
M-Iaf,w,s§	Modeling for Architects (Normally 2 cred.; open only to students whose major subject is architecture; prereq. registration in Architectural Design)				
AD-If,w,s††§	Architectural Design, Grade I (15 cred., normally 5 cred. per qtr.; soph., jr.; prereq. registration in 4-5-6)				

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

Note.—Consult the Bulletin of the Institute of Technology for program of hours, days, buildings, and instructors, and for additional courses.

51f-52w-53s†	History of Architecture (The same as Fine Arts 51-52-53) (9 cred.; jr., sr.; prereq. consent of instructor)				
57f-58w-59s	Building Materials and Methods (6 cred.; jr., sr.; no prereq.)				
61f-62w-63s	Tutorial Work in History of Architecture (The same as Fine Arts 61-62-63) (6 cred.; jr., sr.; prereq. 53)				
67f-68w-69s	Theory of Design (6 cred.; jr., sr.; no prereq.)				
104f	Housing (3 cred.; sr.; no prereq.)				
110	Architectural Acoustics (2 cred.; sr.; no prereq.) (<i>Not offered in 1942</i>)				
DP-IIIIf,w,s†§	Drawing and Painting, Grade III (6 cred., normally 2 cred. per qtr.; jr., sr.; prereq. DP-II or equiv.)				
DP-IVf,w,s†§	Drawing and Painting, Grade IV (6 cred., normally 2 cred. per qtr.; jr., sr.; prereq. DP-III or equiv.)				
IHP-If§	Illustration (2 cred., normally 2 cred. per qtr.; jr., sr.; prereq. DP-I or equiv.)				
IHP-IIw,s§	Hand Print Processes (4 cred., normally 2 cred. per qtr.; jr., sr.; prereq. DP-I or equiv.)				
M-IIIf,w,s†§	Modeling, Grade II (6 cred., normally 2 cred. per qtr.; jr., sr.; prereq. M-I)				
SD-If,w§	Stage Design (4 cred., normally 2 cred. per qtr.; jr., sr.; no prereq.)				
AD-IIIf,w,s††§	Architectural Design, Grade II (18 cred., normally 6 cred. per qtr.; jr., sr.; prereq. AD-I)				
ID-If,w,s††§	Interior Architectural Design (24 cred., normally 8 cred. per qtr.; sr.; prereq. AD-II)				

ART EDUCATION

See Education, page 38.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per quarter is charged for this course.

†† A fee of \$2 per quarter is charged for this course.

§ Completion of this course is dependent on achievement rather than time. Students will continue their registration until the course is completed and a mark reported. The number of credits earned per quarter may be larger or smaller than the amount indicated as normal.

¶ This course, DP-II, may be postponed until the student's junior year, if necessary.

ASTRONOMY

Major adviser in the College of Science, Literature, and the Arts.—Professor Luyten.

Major sequence in the College of Science, Literature, and the Arts.—Courses 51-52-53, 101, and Mathematics 50, 51, 105.

(Prerequisites: Mathematics 1, 6-7, or physical science and Mathematics 6.)

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
11f*	Descriptive Astronomy (5 cred.; all; no prereq.)	IV	MTWF	150Ph	Mr. Luyten
		and one evening a week with the telescope, weather permitting			
11s*	Descriptive Astronomy (5 cred.; all; no prereq.)	IV	MTWF	133Ph	Mr. Luyten
		and one evening a week with the telescope, weather permitting			
20f,w,s	Astronomy for Celestial Navigation (5 cred.; all; prereq. Math. 6 "Plane Trigonometry")	III	MTWF	342Ph	Mr. Luyten
		and one 3-hour laboratory period to be arranged			

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

51w*	Astronomy (3 cred.; jr., sr.; prereq. Math. 6)	Ar§	Ar§	Ar§	Mr. Luyten
52w	Astrophysics (4 cred.; prereq. 51 or 11 and Math. 6)	Ar§	Ar§	Ar§	Mr. Luyten
53s	Stellar Astronomy (3 cred.; prereq. 51 or 11 and Math. 6)	Ar§	Ar§	Ar§	Mr. Luyten
101f	Celestial Mechanics (3 cred.; jr., sr., grad.; prereq. Math. 51)	Ar§	Ar§	Ar§	Mr. Luyten
140f	Least Squares (3 cred.; prereq. 51 or 11 and at least Math. 51)	Ar§	Ar§	Ar§	Mr. Luyten

NOTE.—Courses 101 and 140 are usually offered in alternate years, and only one will be given in each year, depending largely on the demand.

BACTERIOLOGY

MEDICAL SCHOOL

Major adviser in the College of Science, Literature, and the Arts.—Dr. Larson.

Major sequences in the College of Science, Literature, and the Arts.—Sequence A. For work in medical or public health bacteriology, Courses 101-102, 104, 114, 116, 120, 124, and Zoology 51.

(Prerequisites: Zoology 1-2-3 and 10 credits in chemistry.)

Sequence B. For work in industrial bacteriology, Courses 53, 103, 104, 114, 121-122, 123.

(Prerequisites: 4 credits in botany or zoology; 15 credits in chemistry; and 8 credits in biochemistry or organic chemistry.)

* No student may receive credit for both Course 11 and Course 51.

§ No student should register for this course without first consulting Professor Luyten.

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

No.	Title	Hour	Day	Bldg.	Instructor
1f	Elements of Bacteriology (Exclusively for students in the three-year curriculum in Nursing) (4 cred.; no prereq.)				
	Lect.	II	MWF	MH	Ar
	Lab. Secs. A, B	III	MWF	MH	Ar
	C, D	IV	MWF	MH	Ar
	E	} III VI VII	S	MH	Ar
			Th		
			T		
1s	Elements of Bacteriology (Exclusively for students in the three-year curriculum in Nursing) (4 cred.; no prereq.)				
	Lect.	III	MWF	MH	Ar
	Lab.	IV	MWF	MH	Ar

Senior College Courses

Course 53 is open to Junior College students who have a grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

53f,w,s††	General Bacteriology (5 cred.; soph. with a C average in the prerequisite courses, jr., sr.; prereq. 10 cred. in chem. and 4 cred. in bot. or zool.)	VII, VIII, IX	MWF	MH	Ar
101w*††	Medical Bacteriology (5 cred.; jr., sr., grad.; prereq. Zool. 1-2-3 and 10 cred. in chem.)				
	Lect.	IV	MWF	MH	Dr. Henrici,
	Lab. Sec. 1	I, II	MWF	MH	Dr. Larson
	2	I, II	TThS	MH	
102s*‡	Medical Bacteriology (4 cred.; jr., sr., grad.; prereq. 101)				
	Lect.	I	MWF	MH	Dr. Larson
	Lab. Sec. 1	II, III	M	MH	Dr. Henrici
		II	WF	MH	Dr. Green
	2	I, II	T	MH	
		I	ThS	MH	
103w	Soil Microbiology (5 cred.; jr., sr., grad.; prereq. 53, and 15 cred. in chem.)	I, II, III	TThS	MH	Dr. Skinner
104s	Sanitary Bacteriology (4 cred.; jr., sr., grad.; prereq. 53 and 15 cred. in chem.) (Class limited to 15 students)	VI, VII	MWF	MH	Dr. Skinner
114s	Molds, Yeasts, and Actinomycetes (4 cred.; jr., sr., grad.; prereq. 53 or 101)	VII, VIII	TTh	MH	Dr. Henrici
		III, IV	S	MH	
116w	Immunity (3 cred.; jr., sr., grad.; prereq. 102)	VII, VIII, IX	TTh	MH	Dr. Larson
120s	Diseases of Animals Transmissible to Man (3 cred.; jr., sr., grad.; prereq. 102)	VI	MWF	MH	Dr. Green
121f-122w†	Physiology of Bacteria (6 cred.; jr., sr., grad.; prereq. Bact. 53 and 8 cred. in org. chem. or biochem.)	III	TThS	MH	Dr. Halvorson
123s	Applied Bacteriology (3 cred.; jr., sr., grad.; prereq. 121-122)	III	TThS	MH	Dr. Halvorson
124f	Filterable Viruses (4 cred.; jr., sr., grad.; prereq. 102)	VI	TTh	MH	Dr. Green
	Lect.	VII, VIII	TTh	MH	
	Lab.				
153f,w,s	Hospital Bacteriology (3 cred.; prereq. permission of chairman of dept.)	Ar	Ar	Ar	Dr. Levine, Dr. Hoyt

* Both Courses 101 and 102 must be completed before credit will be given for either.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ Microscope required. Students (except medical) may obtain use of microscope by purchasing \$1.50 microscope card from bursar.

¶ No student may receive credit for both Course 53 and Course 101.

BIOSTATISTICS

See Preventive Medicine and Public Health, page 90.

BOTANY

Major adviser in the College of Science, Literature, and the Arts.—Associate Professor Abbe.

Major sequences in the College of Science, Literature, and the Arts.—

- A. In Botany, Courses 62, 63, 113, 118, 119, 131, 140, and additional credits in approved courses to make a total of 30 credits in Senior College courses.
- B. In special fields, such as morphology, taxonomy, physiology, or ecology, a major will consist of the respective courses with numbers over 100 and additional credits in approved courses to make a total of 30 credits in Senior College courses.

(Prerequisites: *For sequences A and B:* Courses 1, 2, 5, 7, 21, 22. If possible, beginning chemistry and at least one year of French or German should be completed as part of the Junior College work.)

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education.—Professor Butters.

Requirements for a teacher's certificate.—Major recommendation, 30 credits in botany including Courses 1, 2, 5, 7, 21, 22, 62, and 8 credits of electives.

Minor recommendation, 19 credits in botany including Courses 1, 2, 7, 21, 22, and three additional credits.

For a specialized curriculum in natural science see the Bulletin of the College of Education.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f	General Botany—A survey lecture course on plants and their human interest, contributing to liberal culture; characteristics of living matter; fundamental facts of structure, growth, and reproduction; relation of plants to their environment and to each other; principles underlying inheritance, variation, plant breeding, and organic evolution (4 cred.; all; no prereq.) (Quiz-lab. sections limited to 90 each)				
	Lect. Sec. 1	III	TThS	BoAud	Mr. Huff
	2	{ VI	T	BoAud	Mr. Huff
		{ VI, VII	Th	BoAud	Mr. Huff
	Quiz-Lab. Sec. 1	I	TTh		
	2	II	TTh		
	3	III	MW		
	4	IV	MW		
	5	VI	WF		
	6	VI, VII	M		
	7	VII, VIII	W		
	8 } (For Ag.	VII, VIII	T		
	9 } studs. only)	VIII, IX	Th		
1w,s	General Botany (See 1f)				
	Lect.	III	TThS	BoAud	Mr. Huff
	Quiz-Lab. Sec. 1	I	TTh		
	2	II	TTh		
	3	III	MW		
	4	IV	TS		
	5	IV	MW		

No.	Title	Hour	Day	Bldg.	Instructor
2w,s†	Elementary General Morphology of Plants (3 cred.; all; prereq. 1)				
	Lect.	III, IV	M	BoAud	Mr. Huff
	Lab.	III, IV	WF	1,4,5,8Bo	
5w‡	Elementary Plant Histology (3 cred.; all; prereq. 1)	VI, VII, VIII	WF	1,4,5,8Bo	Mr. Butters
7f‡	Taxonomy of Flowering Plants (3 cred.; all; prereq. 1)	I, II	MWF	1,4,5,8Bo	Mr. Sharsmith
7s‡	Taxonomy of Flowering Plants (See 7f)				
	Sec. 1	I, II	MWF	1,4,5,8Bo	Mr. Sharsmith
	2	VI, VII, VIII	TTh	1,4,5,8Bo	Mr. Sharsmith
10s	Minnesota Plant Life (3 cred.; all; no prereq.)				
	Lect.	VI	W	BoAud	Mr. Huff
		VI, VII	F	BoAud	Mr. Huff
	Lab. Sec. 1	VI, VII	M	4,5Bo	
	2	VII, VIII	W	4,5Bo	
21f†	Elementary Ecology (3 cred.; all; prereq. 1)	III, IV	MWF	1,4,5,8Bo	Mr. Lawrence
21w‡	Elementary Ecology (See 21f) (Laboratory sections in 21w are limited to 90 each)				
	Lect.	VII	TTh	BoAud	Mr. Cooper,
	Lab. Sec. 1	V, VI	TTh	1,4,5,8Bo	Mr. Lawrence
	2	VIII, IX	TTh	1,4,5,8Bo	
21s‡	Elementary Ecology (See 21f)				
	Lect.	VII	TTh	BoAud	Mr. Cooper,
	Lab. Sec. 1	V, VI	TTh	1,4,5,8Bo	Mr. Lawrence
	2	VIII, IX	TTh	1,4,5,8Bo	
22f,w,s†	Elementary Plant Physiology (3 cred.; all; prereq. 1 and high school or college chem. or registration in college chem.) (Laboratory sections are limited to 56 each)				
	Lect.	VII	TTh	4Bo	Mr. Burr,
	Lab. Sec. 1	V, VI	TTh	104Bo	Mr. Moyer,
	2	VIII, IX	TTh	104Bo	Mr. French

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

62w‡	Bryophytes and Pteridophytes (3 cred.; jr., sr.; prereq. 10 cred. incl. 2)	VI, VII, VIII	MW	8Bo	Mr. Huff
63s‡	Gymnosperms and Angiosperms (3 cred.; jr., sr.; prereq. 7 and either 2 or 62)	III, IV	MWF	202Bo	Mr. Butters
108	<i>Pteridophytes</i> (5 cred.; sr., grad.; prereq. 18 cred. incl. 7 and 62) (<i>Not offered</i>)				
110w	Gymnosperms (5 cred.; sr., grad.; prereq. 18 cred. incl. 7 and 63)	Ar	Ar	Ar	Mr. Butters
113f-114w-115s*	Advanced Taxonomy of Flowering Plants (9 cred.; jr., sr., grad.; prereq. 10 cred. incl. 7)	VI, VII, VIII	TTh	202Bo	Mr. Rosendahl
118f‡	Cytology I—Cytoplasmic Phenomena (3 cred.; jr., sr., grad.; prereq. 15 cred. in biol. and an elem. course in chem.)	III-IV	MWF	202Bo	Mr. Moyer
119w‡	Cytology II—Nuclear Phenomena (3 cred.; jr., sr., grad.; prereq. 15 cred. in biol. and an elem. course in chem.)	III-IV	MWF	202Bo	Mr. Abbe
120f‡‡	Research Methods in Histology and Cytology (3 or 5 cred.; prereq. 118 and 119)	Ar	Ar	202Bo	Mr. Abbe
121s‡	Morphogenesis (3 cred.; jr., sr., grad.; prereq. 119 and 127 or equiv.)	Ar	Ar	202Bo	Mr. Abbe

* Any quarter may be taken separately, except 115s, which requires either 113f or 114w as a prerequisite.

‡ A fee of \$1 is charged for this course.

‡‡ A fee of \$3 is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
127f	Anatomy of Vascular Plants (5 cred.; jr., sr., grad.; prereq. 18 cred. incl. 5)				
	Lect.	II	TThS	202Bo	Mr. Butters
	Lab.	III, IV	TS		
		III	Th		
		or			
		Ar	Ar		
131f	Field Ecology (5 cred.; jr., sr., grad.; prereq. 10 cred. incl. 21)				
		VI, VII, VIII	MWF	214Bo	Mr. Cooper, Mr. Lawrence
132w‡	Ecological Anatomy (5 cred.; jr., sr., grad.; prereq. 10 cred. incl. 5 and 21)				
		VI, VII, VIII	MWF	214Bo	Mr. Cooper
133s	Plant Geography of North America (5 cred.; jr., sr., grad.; prereq. 10 cred. incl. 21)				
		VI, VII, VIII	MWF	215Bo	Mr. Cooper
134s‡	Research Methods in Ecology (5 cred.; jr., sr., grad.; prereq. 18 cred. incl. 21)				
		VI, VII, VIII	MWF	214Bo	Mr. Lawrence
136	<i>Physiology of the Cell.</i> (This course has been renumbered 149.)				
137‡	<i>Experimental Ecology</i> (5 cred.; jr., sr., grad.; prereq. 10 cred. incl. 21 and 22) (<i>Not offered</i>)				
140w	General Plant Physiology (3 cred.; jr., sr., grad.; prereq. 22, and elem. inorg. chem.)				
		III	MWF	110Bo	Mr. Moyer
141f	Physiochemical Principles and Measurements in Plant Physiology (3 cred.; jr., sr., grad.; prereq. 20 cred. in chem. or biochem.)				
	Lect.	7:55	MWF	4Bo	Mr. Moyer
	For laboratory see 146.				
142w	Photosynthesis and Other Effects of Radiation (3 cred.; jr., sr., grad.; prereq. same as for 141)				
	Lect.	7:55	MWF	110Bo	Mr. Burr
	For laboratory see 147.				
143s	Plant Metabolism (3 cred.; jr., sr., grad.; prereq. same as for 141)				
	Lect.	7:55	MWF	110Bo	Mr. French
	For laboratory see 148.				
146f‡‡	Advanced Physiology Laboratory (2 cred.; jr., sr., grad.; to be taken with or after 141)				
	Ar		Ar	104Bo	Mr. Moyer
147w‡‡	Advanced Physiology Laboratory (2 cred.; jr., sr., grad.; to be taken with or after 142)				
	Ar		Ar	104Bo	Mr. French
148s‡‡	Advanced Physiology Laboratory (2 cred.; jr., sr., grad.; to be taken with or after 143)				
	Ar		Ar	104Bo	Mr. French
149s	Physiology of the Cell (3 cred.; jr., sr., grad.; prereq. 141, or permission of instructor) (Formerly numbered 136)				
		II	TThS	110Bo	Mr. Moyer
154f‡‡	Spectroscopy and Photochemistry Applied to Biology (3 to 5 cred.; jr., sr., grad.; prereq. 20 cred. in chem. or biochem.) (Formerly called Applied Spectroscopy in Biology)				
	Lect.	Ar	MWF	110Bo	Mr. French
	Lab.	Ar	MWF		
197f‡-198w‡- 199s‡	Problems (1 to 5 cred. per qtr.; jr., sr., grad.; prereq. 20 cred. and permission of instructor)				
		Ar	Ar	Ar	Ar

For graduate courses given during 1942-43 consult the department.

PLANT PATHOLOGY AND BOTANY

Students in this college may elect courses in Plant Pathology and Botany by arrangement with the department. See the program of the College of Agriculture, Forestry, and Home Economics in this bulletin.

‡ A fee of \$1 is charged for this course.

‡‡ A fee of \$3 is charged for this course.

CHEMISTRY

INSTITUTE OF TECHNOLOGY

Major adviser in the College of Science, Literature, and the Arts.—Professor Sneed.

Major sequence in the College of Science, Literature, and the Arts.—Analytical Chemistry 1-2; Organic Chemistry 51-52-153; Physical Chemistry 101-102-103.

(Prerequisites: Inorganic Chemistry 13 with its prerequisites; a year of college physics; mathematics through differential and integral calculus which need not be completed until the end of the student's junior year.)

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education.—Professor Palmer O. Johnson.

Requirements for a teacher's certificate.—Major recommendation: Inorganic Chemistry 9-10, 12; Analytical Chemistry 7; Organic Chemistry 51-52 and 10 additional credits in chemistry.

Minor recommendation: Inorganic Chemistry 9-10, 12; Analytical Chemistry 7 and 6 additional credits in chemistry.

For a specialized curriculum in natural science see the Bulletin of the College of Education.

Note.—Analytical Chemistry 1-2 and all courses numbered above 50 count as Senior College courses.

INORGANIC CHEMISTRY

No.	Title	Hour	Day	Bldg.	Instructor
1f†-2w††	General Inorganic Chemistry. (For architecture, pre dental, pre medical, medical technology, physical education for women, agriculture, forestry, and home economics students) (4 cred. per qtr.; no prereq.)				
	1f-2w (For pre dental, pre medical, medical technology, and physical education for women students)				
	Lect.	VI	MWThF	225C	Mr. Pervier
	Quiz	VI	T	Ar	
	Lab.	VII, VIII, IX	T	290C	
	1f-2w (For architecture, agriculture, forestry, and home economics students)				
	Lect.	VI	MWF	100C	Mr. Barber
	Quiz (fall)	VII	F	Ar	
	Lab. (fall)	VII, VIII, IX	M	210C	
	Quiz (winter)	VII	M	Ar	
	Lab. (winter)	VII, VIII, IX	F	210C	
3s†	Semimicro Qualitative Analysis (For agriculture, forestry, and home economics students) (4 cred.; prereq. 2)				
	Lect.	VII	MWF	325C	Mr. Barber
	Lab.	VIII, IX	MW	210C	
4f†-5w††	General Inorganic Chemistry (8 cred.; for pre medical students only; prereq. entrance cred. in chem.)				
	Lect.	VII	MWF	325C	Mr. Reyerson
	Lab.	VII, VIII, IX	T	210C	
	Quiz	VI	T	100C	
4f†-5w††	General Inorganic Chemistry (8 cred.; primarily for pre dental and medical technology students; prereq. entrance cred. in chem.)				
	Lect.	VII	MWF	225C	Mr. Maynard
	Lab.	VII, VIII, IX	Th	210C	
	Quiz	VI	Th	100C	

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

† A fee of \$2 per quarter is charged for this course. The student should purchase a \$5 chemistry deposit card from the bursar, in the Administration Building. No student will be assigned a desk in the laboratory until he presents this card. The \$2 course fee, laboratory material, and breakage will be charged against the deposit.

No.	Title	Hour	Day	Bldg.	Instructor
6f†-7w†‡	General Inorganic Chemistry (10 cred.; all; no prereq. is 12s)		A	A continuation of this course	
	Lect.	II	MWF	325C	Miss Cohen
	Quiz	I	Th	410C	
	Lab. Sec. 1	I, II	TS	210C	
		II	Th	210C	
	2	II, III	Th	210C	
		I, II, III	T	210C	
9f†-10w†‡	General Inorganic Chemistry (10 cred.; all; prereq. entrance cred. in chem.)				
	Lect.	II	MWF	100C	Mr. Sneed
	Lab. Sec. 1	I, II	TThS	290C	
	2	I, II, III	ThS	290C	
9f†-10w†‡	General Inorganic Chemistry (10 cred.; open only to agriculture, forestry, and home economics students; prereq. entrance cred. in chem.)				
	Lect.	VII	MWF	100C	Mr. Klug
	Lab.	VIII, IX	MWF	110C	
9w†-10s†‡§	General Inorganic Chemistry (10 cred.; all; prereq. entrance cred. in chem.)				
	Lect. Sec. 1	III	MWF	325C	Miss Cohen
	2	III	MWF	410C(w)	
				225C(s)	Mr. Taylor
	Lab. Sec. 1	VI, VII	MWF	210C	
	2	VI, VII	MWF	290C	
11f*†	Semimicro Qualitative Analysis (4 cred.; primarily for premedical and pre dental students; prereq. Course 2 or 5)				
	Lect.	IV	MWF	225C	Miss Cohen
	Lab.	VI, VII, VIII, IX	F	210C	
11s*†	Semimicro Qualitative Analysis (4 cred.; for premedical, pre dental, and medical technology students; prereq. 2 or 5)				
	Lect. Sec. 1	VI	MWF	225C	Mr. Pervier
	Lab.	VI, VII, VIII, IX	Th	290C	
	Lect. Sec. 2	VII	MWF	325C	Mr. Reyerson
	Lab.	VI, VII, VIII, IX	T	210C	
12f*†-13w†	Semimicro Qualitative Analysis (10 cred.; all; prereq. 7 or 10)				
	Fall Lect.	I	TThS	325C	Mr. Taylor
	Lab.	I, II, III	MW	290C	
	Winter Lect.	VI	WF	325C	Mr. Taylor
	Quiz	VI	M	410C	
	Lab.	VII, VIII, IX	WF	290C	
		VII, VIII	M	290C	
12s*†	Semimicro Qualitative Analysis (See 12f-13w)				
	Lect. Sec. 1 (For those who have completed Course 10)	II	MWF	100C	Mr. Sneed
	Lab.	I, II, III	ThS	290C	
	Lect. Sec. 2 (For those who have completed Course 7)	II	MWF	325C	Miss Cohen
	Lab.	I, II	TThS	210C	
		or			
		I, II, III	TTh	210C	
13f†	Semimicro Qualitative Analysis (See 12f-13w; prereq. 12)				
	Lect.	VI	MW	325C	Mr. Heisig
	Quiz	VI	F	335EE	
	Lab.	VII, VIII, IX	WF	290C	
		VII, VIII	M	290C	

* Course 12 may be substituted for Course 11 by premedical and pre dental students who have completed Course 6-7. No student may receive credit for both Course 12 and Course 11.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$2 per quarter is charged for this course. The student should purchase a \$5 chemistry deposit card from the bursar, in the Administration Building. No student will be assigned a desk in the laboratory until he presents this card. The \$2 course fee, laboratory material, and breakage will be charged against the deposit.

§ Students who have failed in 1f, 4f, 6f, or 9f may register in Section 2 for this course without further prerequisite.

No.	Title	Hour	Day	Bldg.	Instructor
101s	History of Chemistry (2 cred.; sr., grad.; prereq. Org. Chem. 52 or consent of instructor)	IV and one hr. ar.	T	111C	Miss Cohen
102s‡	Semimicro Qualitative Analysis (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1-2)	Ar	Ar	290C	Mr. Barber
103f	The Chemistry of the Solid State (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1-2, Org. Chem. 52)	III	TThS	215C	Mr. Klug
104w	Atomic Structure and the Chemical Bond (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1-2, Org. Chem. 52)	II	TThS	115C	Mr. Taylor
105s	Co-ordination Compounds (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1-2, Org. Chem. 52)	II	TThS	115C	Mr. Maynard
109w‡-110s‡	Synthetic Inorganic Chemistry (3 to 5 cred. per qtr.; jr., sr., grad.; prereq. Org. Chem. 51)	Ar	Ar	Ar	Mr. Heisig
117s‡§	Glass Blowing (1 cred.; jr., sr., grad.; no prereq.)	Ar	Ar	10C	Mr. Taylor

For other courses in Inorganic Chemistry see the Bulletin of the Institute of Technology.

ANALYTICAL CHEMISTRY

1w‡-2s‡¶	Quantitative Analysis (10 cred.; soph., jr., sr.; prereq. Inorg. Chem. 13)				
	Lect.	VI		M 325C	Mr. Geiger
	Quiz	VI		F 410C	
	Rec.	VI or VII		W 111C	
	Lab. Sec. 1 Any 9 hrs. selected from	VI-IX		MWF 310C	
	2 (winter)	I-IV		T 310C	
		I-III		Th 310C	
		I-II		S 310C	
	2 (spring)	I-IV		T 310C	
		VII-IX		T 310C	
		I-II		S 310C	
7f‡	Quantitative Analysis (4 cred.; primarily for premedical students; prereq. any course in qualitative chemistry)				
	Sec. 1 and 2				
	Lect.	VI		F 325C	Mr. Geiger
	Rec. (Limit 35 in each sec.)	VI or VII		W 111C	
	Quiz	VI		M 410C	
	Lab. Any other 8 hrs. selected from	VI-IX		MWF 310C	
	Sec. 3				
	Lect.	VI		T 325C	Mr. Meehan
	Rec.	VI		Th 325C	
	Lab.	VII, VIII, IX	TTh	310C	
		I, II, III	S	310C	
		or			
		II, III, IV	S	310C	

‡ A fee of \$2 per quarter is charged for this course. The student should purchase a \$5 chemistry deposit card from the bursar, in the Administration Building. No student will be assigned a desk in the laboratory until he presents this card. The \$2 course fee, laboratory material, and breakage will be charged against the deposit.

§ Carries credit only for juniors and seniors majoring in natural science.

¶ Course 2s may precede 1w, if desired.

No.	Title	Hour	Day	Bldg.	Instructor
7s‡	Quantitative Analysis (4 cred.; primarily for premedical students; prereq. any course in qualitative chemistry)				
	Lect.	VI	T	325C	Mr. Meehan
	Rec.	VI	Th	325C	
	Lab.	VII, VIII, IX	TTh	310C	
		I, II, III	S	310C	
		or			
		II, III, IV	S	310C	
103f‡	Quantitative Inorganic Microanalysis (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1-2)	Ar	Ar	Ar	Mr. Sandell
104s‡	Microchemistry (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1-2)	Ar	Ar	Ar	Mr. Sandell
122f‡	Advanced Analytical Chemistry—A condensed review of modern fundamentals of gravimetric and volumetric analysis. (1 to 2 cred.; jr., sr., grad.; prereq. quantitative chemistry; 1 lecture, 1 recitation, and 3 to 6 laboratory hours to be arranged)	Ar	Ar	Ar	Mr. Geiger
123f‡	Advanced Analytical Chemistry (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1-2 or permission of instructor)				
	Lect.	Ar	Ar	Ar	Mr. Meehan
	Lab.	Ar	Ar	310C	
127s‡	Optical Methods in Analytical Chemistry (2 to 3 cred.; jr., sr., grad.; prereq. Phys. Chem. 103)	Ar	Ar	Ar	Mr. Meehan
	Lect.	Ar	Ar	Ar	Mr. Meehan
	Lab.	Ar	Ar	310C	
131f‡	Application of Indicators (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1-2 and Phys. Chem. 103)	VI	MW	315C	Mr. Kolthoff
	Lect.	VI	MW	315C	Mr. Kolthoff
	Lab.	Ar	Ar	Ar	
132w‡	Electrometric Titrations (3 cred.; jr., sr., grad.; prereq. Anal. Chem. 1-2 and Phys. Chem. 103)	VI	MW	315C	Mr. Kolthoff
	Lect.	VI	MW	315C	Mr. Kolthoff
	Lab.	Ar	Ar	Ar	
140w‡	Water Analysis (2 cred.; jr., sr., grad.; prereq. Anal. Chem. 1-2)	Ar	Ar	Ar	Mr. Sandell

ORGANIC CHEMISTRY

1f‡-2w‡‡	Elementary Organic Chemistry (8 cred.; primarily for premedical and pre dental students; prereq. Inorg. Chem. 11)				
	Lect. (all secs.)	I	MWF	100C	Mr. Arnold
	Lab. conference (all secs.)	II	T	325C	Mr. Arnold
	Quiz (all secs.)	I	T	Ar	Ar
	Lab. Sec. 1	VI-IX	T	390C	
	2	VI-IX	W	390C	
	3	I-IV	S	390C	
1w‡-2s‡‡	Elementary Organic Chemistry (See 1f-2w)				
	Lect. (all secs.)	IV	MWF	100C	Mr. Koelsch
	Lab. conference (all secs.)	V	T	100C	Mr. Koelsch
	Quiz (all secs.)	IV	T	Ar	Ar
	Lab. Sec. 1	VI-IX	W	390C	
	2	VI-IX	Th	390C	
	3	I-IV	S	390C	

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$2 per quarter is charged for this course. The student should purchase a \$5 chemistry deposit card from the bursar, in the Administration Building. No student will be assigned a desk in the laboratory until he presents this card. The \$2 course fee, laboratory material, and breakage will be charged against the deposit.

No.	Title	Hour	Day	Bldg.	Instructor
51f†-52w††-153s†	Elementary Organic Chemistry (5 cred. per qtr.; open to all except premedical, pre-dental, and pharmacy students; required of all chemical engineers, chemists, and S. L. and A. majors; prereq. 15 cred. in college chemistry. Course 153 is prerequisite to all other advanced courses in organic chemistry)				
	Lect.	III	MWF	100C	Mr. Lauer (f,w) Mr. Smith(s)
	Lab. conference	III	ThS	325C	Mr. Arnold
	Lab. Sec. 1	II, III, IV	T	390C	
		VI, VII, VIII	T	390C	
	2	VI, VII, VIII	TTh	390C	
	3	VII, VIII, IX	WF	390C	
54f-55w†-156s	Elementary Organic Chemistry—Lectures only. The lectures are the same as those in Course 51f-52w-153s, together with general discussions of organic laboratory practice. (3 cred. per qtr.; open to all except premedical, pre-dental, and pharmacy students and students majoring in chemistry; prereq. 15 cred. in college chemistry)				
	Lect.	III	MWF	100C	Mr. Lauer (f,w)
		III	Th	325C	Mr. Smith(s)
105f-106w-107s	Advanced Organic Chemistry (3 cred. per qtr.; jr., sr., grad.; prereq. 153)				
	Lect.	I	MWF	325C	Mr. Smith

For advanced courses in Organic Chemistry see the Bulletin of the Institute of Technology.

PHYSICAL CHEMISTRY

101f-102w-103s	Physical Chemistry—A general survey of the subject (9 cred.; jr., sr., grad.; prereq. two years college chemistry, one year college physics, and mathematics through differential and integral calculus)				
	Lect.	IV	MWF	325C	Mr. MacDougall
	Rec. Sec. 1	IV	S	325C	
	2	IV	S	410C	
104f†-105w†-106s†	Physical Chemistry Laboratory (To accompany or follow Course 101-102-103) (1 or 2 cred. per qtr.)				
	Lab. conference (for students registered for 2 cred. per qtr.)				
	Sec. 1	VI	W	410C	Mr. Livingston
	2	VI	T	410C	Mr. Livingston
	Lab. Sec. 1	VI, VII, VIII	M	190C	
		VII, VIII	W	190C	
	2	VII, VIII	T	190C	
		VI, VII, VIII	Th	190C	
	3	VI, VII, VIII	F	190C	
107f†-108w†	Elementary Physical Chemistry (4 cred. per qtr.; for premedical students only; prereq. two years college chemistry, one year college physics)				
	Lect.	III	MWF	225C	Mr. Crawford
	Rec.	VIII	T	ArC	Mr. Hull
	Lab. Sec. 1	I-III	T	190C	
	2	I-III	Th	190C	
116f-117w-118s	Advanced Physical Chemistry (9 or 12 cred.; jr., sr., grad.; prereq. 103 and calculus)				
	Lect.	II	TThS	215C	Mr. Crawford
128f-129w-130s	Colloid Chemistry (2 cred. per qtr.; sr., grad.; prereq. 103)				
	Lect.	Ar	Ar	ArC	Mr. Reyerson
131f†-132w†-133s†	Colloid Chemistry Laboratory (Cred. ar.; sr., grad.; prereq. 129 or 130)				
	Lect.	Ar	Ar	Ar	Mr. Reyerson
161f-162w	Radioactivity (3 cred. per qtr.; jr., sr., grad.; prereq. 103)				
	Lect.	IV	MWF	215C	Mr. Hull

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$2 per quarter is charged for this course. The student should purchase a \$5 chemistry deposit card from the bursar, in the Administration Building. No student will be assigned a desk in the laboratory until he presents this card. The \$2 course fee, laboratory material, and breakage will be charged against the deposit.

AGRICULTURAL BIOCHEMISTRY

Students in this college may elect courses in Agricultural Biochemistry by arrangement with the division. See the program of the College of Agriculture, Forestry, and Home Economics in this bulletin.

CHILD WELFARE

Adviser in the College of Science, Literature, and the Arts.—Professor Anderson.

Major advisers in the College of Education.—Professor Anderson and Miss Mechem.

For a specialized curriculum in Nursery School and Kindergarten Education, see the Bulletin of the College of Education.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
10s	Introduction to Child Study (2 cred.; 3rd qtr. fr., soph.; no prereq.)	VI	TTh	100Pt	Mrs. Faegre
40f§	Child Training (3 cred.; soph., jr., sr.; prereq. Psy. 1-2)	V	MW	202Pt	Mrs. Maurer
	Lect.				and one hour of observation as arranged
40w§	Child Training (See 40f)	IV	MW	100Pt	Miss Mechem
	Lect. Sec. 1	V	MW	202Pt	Mrs. Maurer
	2				and one hour of observation as arranged
40s§	Child Training (See 40f)	V	TTh	202Pt	Mrs. Maurer
	Lect.				and one hour of observation as arranged

Senior College Courses

Course 80 is open to sophomores who have an average grade of at least C in Psychology 1-2. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

80f	Child Psychology (3 cred.; jr., sr.; prereq. Psy. 1-2)	III	MWF	202Pt	Mr. Anderson
80w	Child Psychology (See 80f)	III	MWF	202Pt	Mrs. Maurer
80s	Child Psychology (See 80f)	I	MWF	202Pt	Mr. Harris
82s	Later Childhood and Adolescence (3 cred.; prereq. 40 or 80 or equiv.)	II	MWF	202Pt	Mrs. Cummings
90s	Home, School, and Family Relations (2 cred.; jr., sr.; prereq. 80)	III-IV	S	202Pt	Mr. Harris
130f	Motor, Linguistic, and Intellectual Development of the Child (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.)	I	MWF	202Pt	Mr. Anderson
131w	Personality, Emotional, and Social Development of the Child (3 cred.; sr., grad.; prereq. 12 cred. in psy. or equiv.)	I	MWF	202Pt	Mr. Anderson

§ Also offered fall and spring on the University Farm campus as Home Economics Education 90. See the program of the College of Education in another part of this bulletin.

No.	Title	Hour	Day	Bldg.	Instructor
133w-134s†	Measurement of Child Personality (4 cred.; sr., grad.; prereq. 10 cred. in psy. or ed. psy. and Ed. Psy. 60, or Biometry 101, and permission of instructor)	VI	TTh	202Pt	Miss Goodenough
140f	Behavior Problems in Younger Children (2 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.)	I, II	S	202Pt	Miss Goodenough
141w	Behavior Problems in Older Children (2 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.)	I, II	S	202Pt	Miss Goodenough
170s	Parent Education (3 cred.; sr., grad.; prereq. 15 cred. in child welfare or home economics or education or psychology or sociology or preventive medicine)	VI	M	202Pt	Mrs. Faegre
190s	Principles of Mental Measurement of Young Children (2 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.)	VI, VII	F		
		VII	TTh	100Pt	Miss Goodenough

For Graduate Students Only

220f-221w-222s	Seminar in Current Research	Ar	Ar	202Pt	Staff
225s	Seminar in Developmental Theory	Ar	Ar	202Pt	Mr. Anderson
230f-231w-232s	Seminar in Recent Literature	IX	M	202Pt	Mr. Anderson
233f-234w-235s	Research in Child Development	Ar	Ar	Ar	Mr. Anderson and others
236f-237w-238s	Seminar in Human Development—Fall: Infant; Winter: Child; Spring: Adolescent	VI, VII	F	204EPt	Miss Goodenough
250f-251w-252s	Seminar in Nursery Education	VIII	TTh	202Pt	Miss Mechem
260f	Physical Growth and Development	III	MWF	204EPt	Miss Goodenough, Dr. Booth
270f-271w-272s	Readings in Child Development	Ar	Ar	Ar	Mr. Anderson and others
273f	Techniques of Parent Education	VI, VII	M	202Pt	Mrs. Faegre
274w-275s	Field Work in Parent Education	Ar	Ar	204EPt	Mrs. Faegre
280w	Psychology of Atypical Children	III	MWF	204EPt	Miss Goodenough

Note.—See also Courses Ed.T. 55-59, 75, 76A-76B-76C, 77A-77B-77C, and Ed.C.I. 130, offered by the Institute of Child Welfare, and listed under Methods and Directed Teaching and Curriculum and Instruction in the program of the College of Education.

CLASSICS

Major adviser in the College of Science, Literature, and the Arts.—Professor Ogle.

Major sequences in the College of Science, Literature, and the Arts.—

GREEK

The elementary course 1-2-3 and twenty-seven credits in courses numbered above 50, which may include nine credits in Latin courses numbered above 50, or nine credits in ancient history.

LATIN

Any three of the courses with numbers between 50 and 100; and one of the following combinations: (a) Any six courses numbered above 100; (b) any three courses numbered above 100, and Greek 51, 52, 53 or nine credits in ancient history.

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education.—Professor Heller.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

Requirements for a teacher's certificate in Latin.—Major recommendation: Course 73-74-75 and any two of the courses with numbers between 50 and 100, 111-112-113 and two courses numbered above 100.

Minor recommendation: Course 73-74-75 and any two of the courses with numbers between 50 and 100.

To secure a recommendation from the department to take Special Methods and Directed Teaching in Latin a student must make a grade of C or better in Course 73-74-75.

GREEK

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w†	Beginning Greek (10 cred.; all; no prereq.)	IV	MTWFS	114F	Mr. Heller
3s	Selections from Attic Prose (5 cred.; all; prereq. 1-2)	IV	MTWFS	114F	Mr. Heller

Senior College Courses

Courses 51, 52, 53, 73 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

51f	Lucian (3 cred.; jr., sr.; prereq. 1-2-3)	II	MWF	112F	Mr. Heller
52w	Homer (3 cred.; jr., sr.; prereq. 1-2-3)	II	MWF	112F	Mr. Heller
53s	Plato, Apology and Selections (3 cred.; jr., sr.; prereq. 1-2-3)	II	MWF	112F	Mr. Heller
73s	New Testament (3 cred.; jr., sr.; prereq. any two of 51,52,53)	Ar	Ar	118F	Mr. Ogle
101f	Tragedy (3 cred.; jr., sr., grad.; prereq. any three of 51,52,53,73)	Ar	Ar	112F	Mr. Heller
102w	Comedy (3 cred.; jr., sr., grad.; prereq. any three of 51,52,53,73)	Ar	Ar	112F	Mr. Heller
103s	Lyric Poetry (3 cred.; jr., sr., grad.; prereq. any three of 51,52,53,73)	Ar	Ar	112F	Mr. Heller
111	<i>History: Herodotus</i> (3 cred.; jr., sr., grad.; prereq. any three of 51,52,53,73) (<i>Not offered</i>)				
112	<i>History: Thucydides</i> (3 cred.; jr., sr., grad.; prereq. any three of 51,52,53,73) (<i>Not offered</i>)				
113	<i>Hellenistic Literature</i> (3 cred.; jr., sr., grad.; prereq. any three of 51,52,53,73) (<i>Not offered</i>)				
121-122-123†	<i>Advanced Composition</i> (9 cred.; jr., sr., grad.; prereq. 24 credits in Greek) (<i>Not offered</i>)				
131	<i>Philosophy: Advanced Plato</i> (3 cred.; jr., sr., grad.; prereq. any two courses numbered above 100) (<i>Not offered</i>)				
132	<i>Philosophy: Aristotle's Ethics</i> (3 cred.; jr., sr., grad.; prereq. 131 or any two courses numbered above 100) (<i>Not offered</i>)				
171f,172w,173s	Independent Reading Course (3 cred. per qtr.; prereq. two courses with numbers above 100; open to students of exceptional ability with the consent of the instructor)	Ar	Ar	112F	Mr. Heller

For Graduate Students Only

201f-202w-203s	Graduate Seminar: Greek Literary Bibliography and Criticism (9 cred.)	Ar	Ar	112F	Mr. Heller
211-212-213	<i>Graduate Seminar: Greek Epic</i> (9 cred.) (<i>Not offered</i>)				
221-222-223	<i>Graduate Seminar: Greek Drama and Lyric Poetry</i> (9 cred.) (<i>Not offered</i>)				
231-232-233	<i>Graduate Seminar: Greek Philosophy</i> (9 cred.) (<i>Not offered</i>)				

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

Courses for Which No Knowledge of Greek Is Required

(See page 37)

LATIN

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w†	Beginning Latin (10 cred.; all; no prereq.)	I	MTWThF	110F	Mr. Cram
3s	Caesar (5 cred.; all; prereq. 1-2, or 1 yr. of high school Latin)	I	MTWThF	110F	Mr. Cram
11f	Vergil I (5 cred.; all; prereq. 1-2, 3, or 2 yrs. of high school Latin)	III	MTWThF	110F	Mr. Cram
12w	Vergil II (5 cred.; all; prereq. 11, or 3 yrs. of high school Latin)	III	MTWThF	110F	Mr. Cram

Senior College Courses

Courses 51, 52, 53, 63, 73-74-75, 81-82-83 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

51f	Selected Readings from Prose and Poetry (3 cred.; jr., sr.; prereq. 12, or 3 or 4 yrs. of high school Latin)	II	TThS	109F	Mr. Ogle
52w	Horace (3 cred.; jr., sr.; prereq. 51 or 63)	II	TThS	109F	Mr. Ogle
53	<i>Suetonius, Selected Lives</i> (3 cred.; jr., sr.; prereq. 51 or 52 or 63) (<i>Not offered</i>)				
63s	Plautus and Terence (3 cred.; all; prereq. 12, or 4 yrs. of high school Latin)	II	TThS	109F	Mr. Heller
73f-74w-75s†	Prose Composition (3 cred.; all; prereq. 12, or 4 yrs. of high school Latin)	Ar	Ar	Ar	Mr. Cram
81-82-83	<i>Survey of Roman Literature</i> (9 cred.; jr., sr.; prereq. any one of Courses 51,52,53,63) (<i>Not offered</i>)				
111f-112w-113s†	Advanced Prose Composition (3 cred.; jr., sr., grad.; prereq. 73-74-75)	VII	T	110F	Mr. Ogle
121	<i>Advanced Vergil</i> (3 cred.; jr., sr., grad.; prereq.*) (<i>Not offered</i>)				
131	<i>Juvenal</i> (3 cred.; jr., sr., grad.; prereq.*) (<i>Not offered</i>)				
133s	Vulgar Latin (Development of Latin into Romance) (3 cred.; jr., sr., grad.; open to advanced students of Latin or a Romance language with the consent of instructor)	II	MWF	109F	Mr. Ogle
142w	Tacitus (3 cred.; jr., sr., grad.; prereq.*)	II	MWF	109F	Mr. Ogle
151f	Advanced Cicero (3 cred.; jr., sr., grad.; prereq.*)	II	MWF	109F	Mr. Ogle
152	<i>Lucretius</i> (3 cred.; jr., sr., grad.; prereq.*) (<i>Not offered</i>)				
171f,172w,173s	Independent Reading Course (3 cred. per qtr.; prereq.*; open to students of exceptional ability with the consent of department)	Ar	Ar	118F	Ar

For Graduate Students Only

201f-202w-203s	Graduate Seminar: Cicero (9 cred.)	VIII, IX	T	108F	Mr. Ogle
211-212-213	<i>Graduate Seminar: The Latin Epic</i> (9 cred.) (<i>Not offered</i>)				
221-222-223	<i>Graduate Seminar: Lyric Poetry</i> (9 cred.) (<i>Not offered</i>)				
231-232-233	<i>Graduate Seminar: Latin Historiography</i> (9 cred.) (<i>Not offered</i>)				
241f-242w-243s	Graduate Seminar: Introduction to Classical Philology (9 cred.)	VIII, IX	Th	110F	Mr. Cram

* Any two of the courses with numbers between 50 and 100.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A student who enters in the spring quarter with three years of high school Latin may, by special permission, take Course 63s.

Courses for Which No Knowledge of Greek or Latin Is Required

No.	Title	Hour	Day	Bldg.	Instructor
17s	Greek and Latin Elements in English. This course has been renumbered 24s.				
24s	Greek and Latin Elements in English (The same as English 24.) (2 cred.; soph., jr., sr.; no prereq.)				
		III	TTh	110F	Mr. Cram
31f,32w||	Greek and Latin Drama (The same as English 31, 32) (2 cred. per qtr.; soph., jr., sr.; no prereq.)				
		III	TTh	114F	Mr. Ogle
42w	Greek Mythology—The origin and development of myths (2 cred.; soph., jr., sr.; no prereq.)				
		I	WF	114F	Mr. Heller
43s	Ancient Mythology in Relation to Literature and Art (The same as English 43) (2 cred.; soph., jr., sr.; no prereq.)				
		I	WF	114F	Mr. Heller
92-93†§	<i>Classical Literary Tradition</i> (4 cred.; jr., sr.; no prereq.) (<i>Not offered</i>)				
106w§	General Linguistics (3 cred.; jr., sr., grad.; prereq. any two courses numbered above 50 in a foreign language)				
		IV	MWF	109F	Mr. Ogle
107s§	Cultural Aspects of Language (3 cred.; jr., sr., grad.; prereq. any two courses numbered above 50 in a foreign language)				
		IV	MWF	109F	Mr. Ogle

COMPARATIVE PHILOLOGY AND LINGUISTICS

See Linguistics and Comparative Philology, page 64.

DRAWING AND DESCRIPTIVE GEOMETRY

INSTITUTE OF TECHNOLOGY

Junior College Courses

41-42-43f,w,s	Technical Drawing—(a) General course in the theory and practice of freehand drawing. Principles of perspective, sketching, rendering, conventions, lettering, and industrial drawing. (b) Modification of the above course of particular interest to dental, medical, and scientific students. (6 cred.; all; no prereq.)				
	Sec. 1	I, II	MWF	411C	Mr. Doseff
	2	VI, VII	MWF		
	3	VIII, IX	MWF		
44f,w,s,su	Lettering—A practical course in plain lettering. (1 cred.; all; no prereq.)				
	Sec. 1	IV	T	21E(fall)	
				21E(winter)	
				107E(spring)	
	2	II	Th	227E(fall)	
				206E(winter)	
				228E(spring)	
45f,w,s	Alphabets—Construction and analysis of classic and modern roman, italic, script, and gothic styles, including Old English. Exercises in composition. Reference work. (2 cred.; soph., jr., sr.; prereq. 44)				
		III	TS	7E	

Senior College Courses

64w	Graphic Arts—Field, development, and application in art and industry. Design and composition. Discussion of materials, style, and technique. (3 cred.; jr., sr.; prereq. 15 cred. in econ.)				
		IV	MWF	206E	Mr. Doseff

Course 64w is one of three courses related in general subject matter of special interest to students of journalism and advertising. The other two, listed elsewhere in this bulletin, are Journalism 65f, "Graphic Arts: Processes," and Business Administration 194s, "Advanced Advertising Procedure."

† To receive credit for any part of this course a student must complete parts preceding dagger.

§ This course can be used as a part of a minor only by students who are majoring in Classics.

|| Students may enter either quarter.

No.	Title	Hour	Day	Bldg.	Instructor
81-82-83f,w,s	Advanced Drawing—Principles of design—traditional and modern. Layouts, composition, and illustration. Black and white and color. Scientific modeling. (3 cred. per qtr.; prereq. 43 or equiv.)	Ar	Ar	Ar	Mr. Doseff
86-87f,w,s†	Anatomical Drawing (3 cred. per qtr.; prereq. 43 or equiv.)	Ar	Ar	Ar	Mr. Doseff

Other courses offered by the Department of Drawing and Descriptive Geometry and listed in the Bulletin of the Institute of Technology are open to students of this college only by special permission of the Students' Work Committee.

ECONOMICS

For courses, major advisers, and major sequences in Economics, see the program of the School of Business Administration, in another part of this bulletin.

EDUCATION

The following courses in Education are regularly open to students in the College of Science, Literature, and the Arts:

Art Education (Courses in Design)

ArtEd.14-15-16	Introduction to Art Education
ArtEd.14A-15A-16A	Introduction to Art Education Laboratory
ArtEd.1-2-3	Fundamental Experiences in Design
ArtEd.20-21-22	Fundamental Experiences in Design (Continuation of 1,2,3)

Art Education (Courses in Representation)

ArtEd.4-6-8	Drawing from Still Life and Pose
ArtEd.24-26-28	Drawing and Painting from Still Life and Pose (Continuation of 4-6-8)
ArtEd.61,62,63	Painting
ArtEd.66,67,68	Painting (Continuation of 61,62,63)
ArtEd.124E-125E-126E	Advanced Painting

Music Education

Mu.Ed.1	Music Orientation
Mu.Ed.63‡	Band Conducting
Mu.Ed.65‡	Instrumentation
Mu.Ed.68	Conducting of Instrumental Music and Survey of Materials
Mu.Ed.70	Accompanying and Sight Reading

Educational Psychology

Ed.Psy.60	Introduction to Statistical Methods
Ed.Psy.116-117	Statistical Methods in Education
Ed.Psy.141	Group Aptitude Testing
Ed.Psy.142	Individual Aptitude Testing

For hours, days, credits, prerequisites, etc., see the Education section of this Combined Class Schedule.

Other courses in Education may be taken by students of the College of Science, Literature, and the Arts only by special permission of the Students' Work Committee and the consent of the College of Education. Requests for the special permission should

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per credit is charged for this course.

be submitted by Junior College students to Assistant Dean Bussey in 106 Folwell Hall and by Senior College students to Assistant Dean Thomas in 217 Folwell Hall.

ENGLISH

Major advisers in the College of Science, Literature, and the Arts.—Professor McDowell; Assistant Professors Carr and Jackson.

Major sequence in the College of Science, Literature, and the Arts.—

A total of at least 31 credits for the entire sequence, comprising the following:

A. Courses 75, Chaucer; 55-56, Shakespeare; 62, Milton.

B. Additional credits in Senior College courses, of which at least twelve must be from courses numbered 100 or above.

(Prerequisites: Courses 21-22 or 22-23)

Composition 65 is recommended as an excellent course for majors in English.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major advisers in the College of Education.—Professor Dora Smith; Associate Professor Nichols.

Requirements for a teacher's certificate.—

	Credits
a. English as a major subject:	
English 22-23. Introduction to Literature.....	10
English 55-56. Shakespeare	6
English 73-74. American Literature	6
Composition 27-28. Advanced Writing	6
Speech	6
Additional credits, all of which must be secured in courses numbered 100 or above.....	6
Total credits	40
b. English as a minor subject:	
English 22-23. Introduction to Literature.....	10
English 55-56. Shakespeare	6
English 73-74. American Literature	6
Composition 27-28. Advanced Writing	6
Total credits	28

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
A-B-C	Freshman English. See Composition, page 42.				
21f,22w-23s¶	Introduction to Literature—21f: Marlowe, Spenser, Bacon, Browne, Milton, and Bunyan; 22w: Dryden, Pope, Swift, Addison and Steele, Johnson, Boswell, Fielding and Sheridan; 23s: Wordsworth, Byron, Shelley, Keats, Lamb, Carlyle, Brown- ing, and Arnold (15 cred.; all; prereq.*)				
	Sec. 1	III	MTWThF	301F	Mr. Thomas
	2	VI	MTWThF	301F	Miss Jackson
24s	Greek and Latin Elements in English Language (The same as Classics 24) (2 cred.; soph., jr., sr.; no prereq.)	III	TTh	110F	Mr. Cram
31f,32w¶	Greek and Latin Drama in English (The same as Classics 31, 32) (2 cred. per qtr.; soph., jr., sr.; no prereq.)	III	TTh	114F	Mr. Ogle

* English A-B-C or Composition 4-5-6 or exemption from requirement.

¶ Students may enter any quarter. Two quarters are required as prerequisite for a major sequence; the second and third quarters are required for a teacher's certificate. Three quarters are recommended.

‡ Students may enter any quarter.

No.	Title	Hour	Day	Bldg.	Instructor
37f-38w-39s¶	Twentieth-Century Literature—Readings in British and American literature since the 1890's, arranged by types of discourse—37f: The literature of opinion, biography, travel, etc., with some reading in the short story; 38w: Poetry and drama; 39s: The novel since Thomas Hardy. This course is intended, as a general introduction to the intelligent reading of literature, for students in all colleges, and not particularly for those meaning to specialize in English (9 cred.; soph., jr., sr.; prereq.*)	VII	MWF	301F (fall) 301F (winter) 166Ph (spring)	Ar Ar Mr. Beach
40w-41s¶	The Bible As Literature (6 cred.; all; prereq.*)	IV	MWF	311½F	Mr. Dunn
43s	Ancient Mythology in Relation to Literature and Art (The same as Classics 43) (2 cred.; soph., jr., sr.; no prereq.)	I	WF	114F	Mr. Heller
45s	American Life in American Literature—This course is intended for students in all colleges, and not particularly for those who mean to specialize in English (3 cred.; soph., jr., sr.; prereq.*)	II	MWF	305F	Mr. McDowell

Senior College Courses

Courses 52-53, 55-56, 62, 73-74, 75, are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

52f-53w†¶	The English Novel—52f: The reading of novels by Defoe, Fielding, Fanny Burney, Jane Austen, Scott, Thackeray; 53w: The reading of novels by Dickens, Charlotte and Emily Brontë, George Eliot, Trollope, Meredith (6 cred.; jr., sr.; prereq.§)	VI	MWF	204F	Mr. Hillhouse
55f-56w†	Shakespeare—Course 55f: The reading of <i>The Comedy of Errors</i> , <i>The Two Gentlemen of Verona</i> , <i>The Taming of the Shrew</i> , <i>The Merchant of Venice</i> , <i>Much Ado About Nothing</i> , <i>Twelfth Night</i> , with collateral reading. <i>Midsummer Night's Dream</i> , <i>The Tempest</i> , to be read independently. Course 56w: The reading of <i>Richard II</i> , <i>Henry IV</i> , 1 and 2, <i>Henry V</i> , <i>Richard III</i> , <i>Julius Caesar</i> , <i>Hamlet</i> , <i>Macbeth</i> , with collateral reading (6 cred.; jr., sr.; prereq.§)	Sec. 1	I	TThS 204F	Mr. Hessler
		2	II	TThS 303F	Mr. Kökeritx
		3	VI	MWF 321F	Miss Carr
		4	VI (fall only)	MWF 114F	Mr. Dunn
		5	VII	MWF 205F	Mr. Brown
55w-56s†	Shakespeare—(See 55f-56w)	Sec. 1	III	TThS 206F	Mr. Nichols(w), Mr. Hillhouse(s)
		2	VI	MWF 209F	Mr. Flanagan
55s	Shakespeare (1st qtr. of 55-56. See 55f-56w)	I	TThS	213F	Mr. Hessler
62f	Milton (3 cred.; jr., sr.; prereq. 21-22 or 55-56)	IV	MWF	205F	Mr. Dunn
62s	Milton (See 62f)	VI	MWF	205F	Mr. Dunn
73f-74w†¶	American Literature—Notable authors from Jonathan Edwards to John Steinbeck (6 cred.; jr., sr.; prereq.§)	II	MWF	301F	Mr. McDowell
75f	Chaucer (4 cred.; jr., sr.; prereq.§)	III	MTThF	305F	Miss Carr
75w	Chaucer (See 75f)	VI	MTWF	303F	Mr. Dunn
75s	Chaucer (See 75f)	III	MTThF	305F	Miss Carr

* English A-B-C or Composition 4-5-6 or exemption from requirement.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ Composition 4-5-6 and 6 additional credits, or English A-B-C, or 10 credits in 21-22-23.

¶ Students may enter any quarter.

No.	Title	Hour	Day	Bldg.	Instructor
97-98-99†	<i>Independent Reading Course</i> (9 cred.; jr., sr.; prereq. permission of department) (<i>Not offered</i>)				
100f	Old English (4 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	II	TWThF	316F	Mr. Clark
102w	Old English Poetry (3 cred.; jr., sr., grad.; prereq. 100)	II	MWF	316F	Mr. Kökeritz
103s	Beowulf (3 cred.; jr., sr., grad.; prereq. 100)	II	MWF	316F	Mr. Kökeritz
105-106†	<i>Eighteenth-Century Poetry</i> (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50) (<i>Not offered—Offered in 1943-44</i>)				
107w-108s†	Eighteenth-Century Prose (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	VII	MWF	204F	Mr. Moore
109f-110w†	Romantic Poets (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	III	TThS	204F	Mr. Beach
111-112†	<i>Seventeenth-Century Prose</i> (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50) (<i>Not offered—Offered in 1943-44</i>)				
113f	American Short Story (3 cred.; jr., sr., grad.; prereq. 73-74)	III	MWF	303F	Mr. McDowell
115w-116s†	The Development of English Prose Style (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	VI	MWF	206F	Mr. Brown
117s	American Essay (3 cred.; jr., sr., grad.; prereq. 73-74)	IV	MWF	110F	Mr. Flanagan
118f-119w†	Nineteenth-Century Prose—118f: The familiar essay and related forms: Lamb, Hazlitt, De Quincey, Landor; 119w: The literature of opinion and social criticism: Carlyle, Newman, Ruskin, Arnold, Mill, Huxley, Pater. (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50 or consent of instructor)	II	TThS	204F	Mr. Nichols
123f-124w-125s†	Technique of the Novel (9 cred.; sr., grad.; prereq. 6 cred. above 50 and permission of instructor)	4:00-6:00	T	204F	Mr. Beach
126f-127w†	Drama, 1660-1900 (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	VII	MWF	306F	Mr. Hillhouse(f), Mr. Nichols(w)
129s	Modern Drama (3 cred.; jr., sr., grad.; prereq. 55-56 or 126-127)	II	MWF	204F	Mr. Warren
133	<i>Ballads</i> (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50) (<i>Not offered</i>)				
135	<i>Spenser</i> (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50) (<i>Not offered—Offered in 1943-44</i>)				
136s	Advanced Shakespeare (3 cred.; jr., sr., grad.; prereq. 55-56)	I	MWF	204F	Mr. Brown
137f	Late Eighteenth-Century Poetry (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	VII	MWF	204F	Mr. Moore
139	<i>Middle English</i> (3 cred.; jr., sr., grad.; prereq. 100) (<i>Not offered</i>)				
140s	Advanced Chaucer (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50, including 75)	IV	MWF	206F	Mr. Kökeritz
141-142	<i>Historical Grammar</i> (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50 (<i>Not offered—Offered in 1943-44</i>))				
146-147	<i>Medieval Romances</i> (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50 (<i>Not offered</i>))				
148w-149s†	Arthurian Romances (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50 including 75)	VII	MWF	305F	Miss Carr
150f	Victorian Poetry (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	II	MWF	206F	Mr. Nichols
151s	Recent Poetry (4 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	III	TWThF	204F	Miss Jackson
152f	Medieval and Early Tudor Drama (3 cred.; jr., sr., grad.; prereq. 55-56)	III	MWF	207F	Mr. Brown
153s	Seventeenth-Century Lyricists (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	IV	MWF	204F	Mr. Moore

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

No.	Title	Hour	Day	Bldg.	Instructor
154w-155s†‡	American Novel (6 cred.; jr., sr., grad.; prereq. 73-74 or 52-53)	III	MWF	303F	Mr. McDowell
156s	American Drama (3 cred.; jr., sr., grad.; prereq. 73-74 or 126-127)	VI	MWF	303F	Mr. Nichols
157w-158s†	Elizabethan Non-Dramatic Literature (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50, including 55-56 or 170)	I	MWF	206F	Mr. Warren
159	<i>Colonial Literature in America</i> (3 cred.; jr., sr., grad.; prereq. 73-74) (<i>Not offered</i>)				
160-161	<i>History of the English Language</i> (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50, including 100) (<i>Not offered</i>)				
162	<i>Restoration Non-Dramatic Literature</i> (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50) (<i>Not offered—Offered in 1943-44</i>)				
163f-164w†	Restoration Drama (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	IV	MWF	204F	Mr. Moore
165f	The Historical Study of Modern English—An introductory course for all who major in English, both in S. L. & A. and in Education (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50; not open to students who have taken 100)	VI	MWF	206F	Mr. Kökeritz
167f-168w	English Literary Criticism (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	II	MWF	306F	Mr. Kökeritz
169	<i>Browning and Tennyson</i> (4 cred.; jr., sr., grad.; prereq. 6 cred. above 50) (<i>Not offered—Offered in 1943-44</i>)				
170-171	<i>Elizabethan Drama (except Shakespeare)</i> (6 cred.; jr., sr., grad.; prereq. 55-56) (<i>Not offered—Offered in 1943-44</i>)				
174	<i>American Usage</i> (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50) (<i>Not offered</i>)				
175w	English Verse (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	III	MWF	206F	Miss Jackson

Attention is called to the following courses in literature offered in other language departments: Classics 106, 107; Italian 164; Scandinavian 161, 171; German 118, 119, 196a.

For Graduate Students Only

228f-229w-230s†	Eighteenth-Century Novel	4:00-6:00	Th	312Lib	Mr. Moore
234f-235w-236s†	Medieval Seminar	4:00-6:00	T	312Lib	Mr. Kökeritz
253f-254w-255s†	American Romanticism I: New England	4:00-6:00	F	312Lib	Mr. McDowell
256f-257w-258s†	Spenser and Milton	4:00-6:00	M	312Lib	Mr. Brown

See also Composition 200-201-202.

COMPOSITION

Major advisers in the College of Science, Literature, and the Arts.—Associate Professor Nichols; Assistant Professor Phelan.

Major sequence in the College of Science, Literature, and the Arts.—Course 67-68; 69-70-71 or 81-82-83; and 91-92-93; and 15 credits in Senior College courses in English to be chosen under the direction of a major adviser from a list of recommended courses.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ Students may enter any quarter.

(Prerequisites: Course 27 and two of the following: 28, 29, 65; also English 21-22 or 22-23.)

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Important note.—No student may register for any course in Freshman English without having taken a placement test. Assignment to a particular course in Freshman English will depend on the student's record in the placement test.

Assignments to all sections in Freshman English and composition are contingent upon the student's presence in class at the first scheduled meeting. A student who is absent from the first meeting of the course forfeits his place in the section.

Freshman English is a 15-credit course consisting of 9 credits of literature and 6 credits of composition. Composition 4-5-6 is a 9-credit course in composition. Either course satisfies the requirement in English for graduation or for admission to the Senior College. Students who have already completed one or more quarters of Freshman English in another college should consult Professor Hillhouse, 221 Folwell Hall, before registering.

Any student who receives an A in composition in Course A or B or 4 or 5 may, upon recommendation of his instructor, be exempted from any further requirement in English.

Any student who receives an A or B in Course 4 or 5 may, upon recommendation of his instructor, elect the following quarter of A-B-C.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor	
Af-Bw-Cs	Freshman English (15 cred.; all; prereq. placement test)	I	MTWThF	Ar	Ar	
		II	MTWThF			
		III	MTWThF			
		IV	MTWFS			
		VI	MTWThF			
		VII	MTWThF			
		Aw-Bs	Freshman English (2 qtrs. of A-B-C. See Af-Bw-Cs)			I	MTWThF	Ar	Ar
VI	MTWThF					
Cf	Freshman English (3rd qtr. of A-B-C. See Af-Bw-Cs)	VI	MTWThF	Ar	Ar	
4f-5w-6s	Freshman Composition (9 cred.; all; prereq. placement test)	Sec. 1	I	MWF	Ar	Ar
		2	II	MWF		
		3	III	MWF		
		4	IV	MWF		
		5	V	MWF		
		6	VI	MWF		
		7	VII	MWF		
		8	I	TThS		
		9	II	TThS		
		10	III	TThS		
4w-5s	Freshman Composition (2 qtrs. of 4-5-6. See 4f-5w-6s)	Sec. 1	II	TThS	Ar	Ar
		2	V	MWF		
4s	Freshman Composition (1st qtr. of 4-5-6. See 4f-5w-6s)	Sec. 1	III	TThS	Ar	Ar
		2	V	MWF		
6f	Freshman Composition (3rd qtr. of 4-5-6. See 4f-5w-6s)	VII	MWF	Ar	Ar	

No.	Title	Hour	Day	Bldg.	Instructor
27f-28w§	Advanced Writing—In the first half of this course the writing is exposition, with stress on logical organization; in the second it consists of description and narration (6 cred.; all; prereq. A-B-C or 4-5-6 or exemption from requirement)				
	Sec. 1	II	MWF	Ar	Mr. Hessler
	2	II	TThS	Ar	Ar
	3	III	MWF	Ar	Mr. Flanagan
	4	III	MWF	Ar	Mr. Buckley
	5	III	TThS	Ar	Miss Scallon
	6	IV	MWF	Ar	Mrs. del Plaine
	7	IV	MWF	Ar	Mrs. McFadyen (f), Mr. Montgomery (w)
	8	IV	MWF	Ar	Miss Christie
27w-28s§	Advanced Writing (See 27f-28w)				
	Sec. 1	I	MWF	Ar	Mr. Briggs
	2	II	MWF	Ar	Mrs. McFadyen
	3	III	MWF	Ar	Mrs. del Plaine (w), Mrs. Phelan (s)
	4	IV	MWF	Ar	Mr. Clark (w), Mr. Montgomery (s)
27s§	Advanced Writing (1st qtr. of 27-28. See 27f-28w)				
	Sec. 1	I	MWF	Ar	Mr. Clark
	2	II	MWF	Ar	Mr. Flanagan
28f§	Advanced Writing (2nd qtr. of 27-28. See 27f-28w)				
		II	MWF	Ar	Ar
29s§	Advanced Writing—The nature of the writing is left as far as possible to the choice of the students. The instructor will divide the class into several groups according to the types of writing students wish to do (3 cred.; all; prereq. 27)				
	Sec. 1	II	MWF	Ar	Mr. Hessler
	2	IV	MWF	Ar	Mr. Nichols
36s	Technical Writing. Consult the Bulletin of the Institute of Technology.				

Senior College Courses

Course 65 is open to Junior College students who have an average grade of at least C in the prerequisite courses.

Courses 67-68, 69-70-71, 81-82-83 are open to Junior College students who have an average of at least B in two quarters of Courses 27-28, 29, 65.

Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

65	<i>The Writing of Term Papers and Theses</i> (3 cred.; jr., sr.; prereq. A-B-C or 4-5-6 and 6 additional cred. in English, or 10 cred. in Eng. 21-22-23) (<i>Not offered</i>)				
67f-68w†	Problems of Style (6 cred.; jr., sr.; prereq. average of B in two qtrs. of 27-28, 29, 65)	IV	MWF	304F	Mrs. Phelan
69f-70w-71s†	Short Story Writing (6 cred.; jr., sr.; prereq. average of B in two qtrs. of 27-28, 29, 65)	VII, VIII	Th	304F	Mrs. Phelan
81-82-83	<i>Essay Writing</i> (6 cred.; jr., sr.; prereq. average of B in two qtrs. of 27-28, 29, 65) (<i>Not offered—Offered in 1943-44</i>)				
91f-92w-93s	Seminar in Writing (9 cred.; sr.; prereq. 6 cred. in Senior College courses in composition and permission of instructor)	VIII, IX	W	304F	Mr. Lewis (f) Mrs. Phelan (w,s)

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ To receive credit for any part of this course a student must complete 27-28 or 27-29.

For Graduate Students Only

No.	Title	Hour	Day	Bldg.	Instructor
200f-201w-202s	Graduate Seminar in Writing (9 cred.; open to graduates and to special students not candidates for degrees on consent of instructor; credits may be counted as part of the distribution requirement in Plan B for the M.A. or as the minor in Plan A)	VIII, IX	W	304F 302F	Mr. Lewis(f) Mr. Warren (w,s)

FINE ARTS

Major adviser in the College of Science, Literature, and the Arts.—Professor Schmeckebeier.

The courses offered by the Department of Fine Arts are planned to develop critical understanding and practical skill in the arts through the various interrelated cultural aspects of history and criticism of style, knowledge of techniques, as well as practical design and studio work. They are offered not only as a field of specialized or professional training, but also are intended to serve the related fields of the humanities, i.e., history, literature, and philosophy, as well as journalism, the social sciences, and education.

The basic introductory course is Fine Arts 1-2-3 which the student is expected to take as early as possible, preferably in the freshman or sophomore year. In it are combined the elementary principles of style and technique in the arts of painting, sculpture, architecture, and the minor arts, with a systematic survey of their development from earliest times through the present day.

Subsequent courses are arranged in two sequences in accordance with the historical or practical interests of the student:

Sequence A is concerned primarily with the historical and critical study of the various stylistic periods, artists, and important works. The selection of courses required and suggested for this sequence offers the student not only a broad acquaintance with the fields of the humanities either as an end in itself or as a foundation for further study, but also affords practical training in art criticism and writing, library, museum, and education work in the arts.

Sequence B is intended for students desiring a practical acquaintance with the various artistic processes as well as technical skill in drawing and studio design. Here, too, the opportunities for direct application to contemporary problems of industrial and commercial design are available to the students in a limited number of courses.

In both elementary and advanced courses the extensive facilities of the University and the Twin Cities are planned as an integral part of the curriculum. These include: the current exhibitions shown at the University Art Gallery, the collection of prints, reproductions, and art reference pamphlets in the Fine Arts Reading Room of the gallery, the original works of art on exhibit in the Minneapolis Institute of Arts, the Walker Art Center, the St. Paul Gallery of Art, and the studio facilities of the University Department of Art Education, and the Institute of Technology.

Major sequences in the College of Science, Literature, and the Arts.—

Sequence A. Art History. Requirements for students majoring in the history and theory of art are Courses 1, 2, 3 (Introduction to Art) and 33 credits in courses numbered above 50. Strongly recommended, but not required, are 6 or more credits of studio work, a reading knowledge of at least one foreign language, and basic courses in history and literature. At the end of the senior year majors are required to take a comprehensive examination covering the general history of art, a knowledge of the techniques and principles of the various art mediums, and a special knowledge of one particular period of art (Ancient, Medieval, Renaissance, Baroque, or Modern).

Sequence B. Practical Studio Work. Requirements for students majoring in practical art are: Courses 1, 2, 3 (Introduction to Art); 9 credits in art history courses with

numbers above 70; and 27 credits in practical art courses given by the School of Architecture, and the Departments of Art Education and Drawing and Descriptive Geometry. For a list of these courses see pages 21, 38, and 37 of this bulletin.

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f	Introduction to Art: Modern Art—Modern architecture, painting, and sculpture in Europe and America, with a critical analysis of the various schools, the theories, and the principal works of contemporary art. Particular emphasis is placed upon the study of important architectural monuments in St. Paul and Minneapolis as well as the original works of art in the Minneapolis Institute of Arts, the Walker Art Center, and the St. Paul Gallery of Art. These, together with the current exhibitions and art reproductions in the University Art Gallery, are the working laboratories of the course (3 cred.; all; no prereq.)	III	TTh	JAud	Mr. Schmeckebier
		and 1 hr. ar.			
2w	Introduction to Art: Ancient and Medieval Art—A general history of painting, sculpture, and architecture from prehistoric times through the Egyptian, Greek, and Roman styles to the end of the Romanesque and Gothic periods of Medieval Europe (3 cred.; all; no prereq.)	III	TTh	JAud	Mr. Schmeckebier
		and 1 hr. ar.			
3s	Introduction to Art: Renaissance and Baroque Art—The history of painting, sculpture, and architecture from the early Renaissance in Italy to the French Revolution (3 cred.; all; no prereq.)	III	TTh	JAud	Mr. Schmeckebier
		and 1 hr. ar.			

Senior College Courses

Courses 51-52-53, 57-58-59, and 71-72-73 are open to sophomores who have completed 9 credits in Fine Arts with an average grade of C. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

51f-52w-53s†	History of Architecture—This is the same course as Arch. 51-52-53. It is intended to present the basic elements of architecture (design, plan, elevation, decoration, and function) as illustrated in the great historic examples. (9 cred.; jr., sr.; prereq. consent of instructor)	IV	MWF	320E	Mr. Lesley
57-58-59	<i>Art in the Americas</i> —A comprehensive study of painting, sculpture, and architecture in North and South America, treating the development of the various colonial styles since the conquest of early settlement, the important pre-Columbian traditions, and the significant national and regional schools of modern art, particularly in Mexico and the United States (3 cred. per qtr.; jr., sr.; prereq. 1-2-3 or 51-52-53) (<i>Offered in alternate years. Not offered in 1942-43</i>)				
61f-62w-63s	Tutorial Work (The same as Arch. 61-62-63) (2 cred. per qtr.; for students majoring in architecture or in fine arts, Sequence A only; prereq. consent of instructor)	Ar	Ar	Ar	Mr. Schmeckebier, Mr. Lesley
71f	Modern Art: Classicism and Romanticism—The development of sculpture and painting from the period of the French Revolution to about 1850 in France, Germany, Spain, and England, as well as parallel developments in America (3 cred.; jr., sr.; prereq. 1-2-3 or 51-52-53)	VI	MWF	JAud	Mr. Lesley
72w	Modern Art: Realism and Impressionism—Painting and sculpture in Europe during the second half of the nineteenth century with particular emphasis on the various schools of Paris, their influence and parallels in England, Germany, and the United States (3 cred.; jr., sr.; prereq. 1-2-3 or 51-52-53)	VI	MWF	JAud	Mr. Lesley

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

- 73s Modern Art: Contemporary Art in Europe and America—The development of painting in Europe from Post-Impressionism (Cezanne, Van Gogh, Gauguin) through contemporary Surrealism, together with the related movements in the United States (3 cred.; jr., sr.; prereq. 1-2-3 or 51-52-53)
- VI MWF JAud Mr. Lesley
- 141f Art in Egypt and the Near East—The development of architecture, painting, sculpture, and the minor arts of vase painting, mosaic, and metal work in Egypt, Mesopotamia (Hittite, Sumerian, Babylonian, and Assyrian), and Persia. Particular emphasis will be placed on the history and exploitation of the various archeological sites as well as on the methods of archeological research (3 cred.; jr., sr., grad.; prereq. 9 cred. in fine arts, or 9 cred. in hist. or lit. with consent of instructor)
- II MWF 2J Mr. Lesley
- 142w Greek Art—A study of the various Aegean styles (Minoan, Helladic) and particularly the evolution of Greek architecture and sculpture from the archaic through the Classic and Hellenistic periods (3 cred.; jr., sr., grad.; prereq. 9 cred. in fine arts, or 9 cred. in hist. or lit. with consent of instructor)
- II MWF 2J Mr. Lesley
- 143s Etruscan and Roman Art—Architecture, painting, and sculpture from the early Etruscan period through Rome of the Republic and Imperial epochs and the period of Constantine (3 cred.; jr., sr., grad.; prereq. 9 cred. in fine arts, or 9 cred. in hist. or lit. with consent of instructor)
- II MWF 2J Mr. Lesley
- 151 *Early Medieval Art*—Painting, sculpture, and architecture from the early Christian through the Byzantine and Pre-Carolingian periods, i.e., from the third to the ninth centuries (3 cred.; jr., sr., grad.; prereq. 9 cred. in fine arts or 9 cred. in history with consent of instructor) (*Offered in alternate years. Not offered in 1942-43*)
- 152 *Carolingian and Romanesque Art*—The development particularly of painting and sculpture in Europe from the ninth to the thirteenth centuries. (3 cred.; jr., sr., grad.; prereq. same as for 151) (*Offered in alternate years. Not offered in 1942-43*)
- 153 *Gothic Art*—Painting, sculpture, and architecture of the Cathedral period in Europe from the thirteenth to the fifteenth centuries (3 cred.; jr., sr., grad.; prereq. same as for 151) (*Offered in alternate years. Not offered in 1942-43*)
- 154f Italian Painting and Sculpture of the Early Renaissance—The development of painting and sculpture in Italy from Masaccio and Ghiberti to Donatello and the great painters of the fifteenth century in Florence, Rome, and Venice (3 cred.; jr., sr., grad.; prereq. 9 cred. in fine arts, or 9 cred. in hist. or lit. with consent of instructor)
- IV MWF 2J Mr. Schmeckebier
- 155w Great Masters of the High Renaissance—A study of the sources and the important works of Leonardo da Vinci, Raphael, Michelangelo, Titian, and Correggio, with a survey of their influence on the Renaissance art of Spain, France, and Flanders (3 cred.; prereq. 9 cred. in fine arts, or 9 cred. in hist. or lit. with consent of instructor)
- IV MWF 2J Mr. Schmeckebier
- 156s Renaissance Art in Northern Europe—The development of painting and sculpture in Flanders, Northern France, and Germany from the Van Eycks to Albrecht Dürer and Hans Holbein. Particular emphasis will be given to the evolution of the graphic arts in the fifteenth century, their influence and contribution to the culture of the Renaissance (3 cred.; jr., sr., grad.; prereq. 9 cred. in fine arts, or 9 cred. in hist. or lit. with consent of instructor)
- IV MWF 2J Mr. Schmeckebier
- 157 *Baroque Art: The Classic Tradition*—The development of painting from the academic schools of the late Renaissance in Italy, through the art of Peter Paul Rubens in Flanders, and the classic period of French painting (Poussin, Lorrain) (3 cred.; jr., sr., grad.; prereq. 9 cred. in fine arts, or 9 cred. in history or literature with consent of instructor) (*Offered in alternate years. Not offered in 1942-43*)
- 158 *Baroque Art in Spain*—Painting during the Golden Age of Spanish culture with particular emphasis on the painting of El Greco and Velasquez (3 cred.; jr., sr., grad.; prereq. 9 cred. in fine arts, or 9 cred. in history or literature with consent of instructor) (*Offered in alternate years. Not offered in 1942-43*)
- 159 *Baroque Art in Holland*—Painting and the graphic arts in the Low Countries during the 17th century, with special study of Rembrandt, Frans Hals, and the minor masters of the Dutch schools (3 cred.; jr., sr., grad.; prereq. 9 cred. in fine arts, or 9 cred. in history or literature with the consent of instructor) (*Offered in alternate years. Not offered in 1942-43*)

For Graduate Students Only

201f-202w-203s Seminar—Special problems in the art of Minnesota and the Northwest (3 cred. per qtr.; prereq. 18 cred. in Senior College courses in fine arts or consent of instructor)

Ar Ar Ar Mr. Schmeckebier

FRENCH

See Romance Languages, page 94.

GEOGRAPHY

Major adviser in the College of Science, Literature, and the Arts.—Professor Davis.

Major sequence in the College of Science, Literature, and the Arts.—Twenty-seven credits from Geography 53, 71, 101, 102, 110, 111, 120, 133, 241, 251, 252, 253; Economics 172, 176; Geology 110; History 80-81-82; Botany 131. At least 20 credits must be in Geography.

(Prerequisites: Courses 11 and 41; Geology 1-2 and A-B, or 1-3 and A-C, or 8; Economics 6-7).

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education.—Associate Professor Brown.

Requirements for a teacher's certificate.—Major recommendation: a minimum of 28 credits from the following courses in Geography: 11, 41, 47, 53, 71, 101, 102, 110, 111, 120, 133, 241, 251, 252, 253.

An additional 5 or 6 credits from the following courses in Geology: 1-2, 1-3, or 8.

Minor recommendation: 18 credits from the following courses in Geography: 11 or 41, 53, 71, 101, 102, 110, 120.

For a specialized curriculum in social studies, see the Bulletin of the College of Education.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
11f*	Human Geography—A study of environmental factors as they limit human activities. Current problems in the use of our natural resources are used as illustrative material. Approximately five weeks are devoted to maps and a study of weather and climate, both of value as a preliminary to military training. (5 cred.; soph., jr., sr.; no prereq.§)				
	Sec. 1	II	MTWThF	103Bu	Mr. Davis
	2	III	MTWThF	103Bu	Mr. Brown
11w*	Human Geography (See 11f)				
	Sec. 1	II	MTWThF	103Bu	Mr. Davis
	2	III	MTWThF	103Bu	Mr. Brown
11s*	Human Geography (See 11f)				
	Sec. 1	II	MTWThF	103Bu	Mr. Davis
	2	III	MTWThF	103Bu	Mr. Brown
27s	Cartography—Maps and charts and the interpretation of aerial photographs (3 cred.; all; prereq. high school algebra and plane geometry)				
		II	MWF	104J	Mr. Dicken
35f*	Geography of the World War Theaters—A series of illustrated lectures dealing with the geography of areas of current interest (1 cred.; soph., jr., sr.; no prereq.)				
		IV	T	103Bu	Mr. Davis, Mr. Brown, Mr. Dicken

* Registration is limited. Written permission from the Junior College office, 106 Folwell Hall, is necessary for admission.

§ There is no prerequisite for either Course 11 or Course 41; but students who intend to take both are advised to take Course 11 first.

No.	Title	Hour	Day	Bldg.	Instructor
35w*	Geography of the World War Theaters (See 35f)	IV	T	103Bu	Mr. Davis, Mr. Brown, Mr. Dicken
35s*	Geography of the World War Theaters (See 35f)	IV	T	103Bu	Mr. Davis, Mr. Brown, Mr. Dicken
41f	Geography of Commercial Production—Types of production and their geographic basis. Emphasis on the production of commodities of commercial significance. (5 cred.; soph., jr., sr.; no prereq. §)	III	MTWThF	133Ph	Mr. Dicken
41w	Geography of Commercial Production (See 41f)	III	MTWThF	133Ph	Mr. Dicken
41s	Geography of Commercial Production (See 41f)	VI	MTWThF	133Ph	Mr. Dicken
43	<i>Political Geography</i> (5 cred.; soph., jr., sr.; no prereq.) (<i>Not offered in 1942-43</i>)				
47w	Geography of Minnesota (3 cred.; soph., jr., sr.; no prereq.)	IV	MWF	103Bu	Mr. Dicken

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

53s	Historical Geography of North America (3 cred.; jr., sr.; prereq. 11, or 15 cred. in history)	I	TThS	103Bu	Mr. Brown
71f	Geography of North America (3 cred.; jr., sr.; prereq. 11)	IV	MWF	103Bu	Mr. Dicken
101w	Geography of Europe (3 cred.; jr., sr., grad.; prereq. 8 cred.)	I	MWF	103Bu	Mr. Davis
102s	Trade Routes and Trade Centers (3 cred.; jr., sr., grad.; prereq. 41)	IV	MWF	103Bu	Mr. Dicken
110f	Geography of South America (3 cred.; jr., sr., grad.; prereq. 8 cred.)	I	TThS	103Bu	Mr. Brown
111f	<i>Cartography and Graphic Representation</i> (3 cred.; jr., sr., grad.; prereq. 10 cred.) (<i>Not offered</i>)				
120s	Geography of Asia (3 cred.; jr., sr., grad.; prereq. 10 cred.)	I	MWF	103Bu	Mr. Davis
133w	Climatology (3 cred.; jr., sr., grad.; prereq. 10 cred. incl. 11)	V	MWF	103Bu	Mr. Brown

Primarily for Graduate Students

241	<i>Field Course (Not offered)</i>				
251f	Seminar	Ar	Ar	Ar	Mr. Davis
252w	Seminar	Ar	Ar	Ar	Mr. Davis and staff
253s	Seminar	Ar	Ar	Ar	Mr. Davis and staff
301f,w,s	Research Problems	Ar	Ar	Ar	Mr. Davis, Mr. Brown, Mr. Dicken

GEOLOGY AND MINERALOGY

Major adviser in the College of Science, Literature, and the Arts.—Associate Professor Thiel.

Major sequences in the College of Science, Literature, and the Arts.—No major sequence in geology should be undertaken without at least two quarters of college chemistry. Trigonometry and physics (preferably Physics 7-8-9) are required. Calculus is required for advanced courses in geophysics. A course in surveying (preferably Civil

* Registration is limited. Written permission from the Junior College office, 106 Folwell Hall, is necessary for admission.

§ There is no prerequisite for either Course 11 or Course 41; but students who intend to take both are advised to take Course 11 first.

Engineering 17) is required. (For courses in surveying see the Bulletin of the Institute of Technology.) Course 23 should be taken as early as possible. One field trip is required of all students majoring in geology.¶

Sequence A. For general geology, federal and state surveys, etc. Courses 91-92-93, 101, 111, 112, 121, (124 and 125) or (144 and 145), 151-152-153.

Sequence B. For petroleum geologist. Courses 91-92-93, 101, 105, 112, 119, (144 and 145) or (124 and 125), 151-152-153.

Sequence C. For mining geologist and mineralographer. Courses 110, 111, 119, 121, 124, 125, 144, 145, 166-167.

Sequence D. For paleontologist. Courses 91-92-93, 101, 103-104, 105, 107-108, 151-152-153. (General zoology is recommended.)

Sequence E. For mineralogist. Courses 61, 105, 106, 110, 111, 121, 131-132, 166-167.

Sequence F. For petrographer. Courses 105, 106, 110, 111, 121, 124, 131-132, 140-141.

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education.—Associate Professor Thiel.

For a specialized curriculum in natural science see the Bulletin of the College of Education.

For a specialized curriculum in Geophysics see the Bulletin of the Institute of Technology.

Junior College Courses

There are three beginning courses in geology: Course 1-2 (with or without the laboratory course A-B); Course 1-3 (with or without the laboratory course A-C); Course 8, which is a one-quarter course, without laboratory, for those who do not take geology to meet a laboratory science requirement.

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w*†	General Geology (Dynamic and Historical)—A synoptical treatment of the materials of the earth and of geologic processes, together with a study of the history of the earth and its inhabitants as recorded in the rocks (6 cred.; all; no prereq.)				
	Sec. 1	II	TThS	2P(f) 210P(w)	Mr. Thiel Mr. Hanley
	2	III	TThS	110P	Mr. Emmons(f), Mr. Hanley(w)
Af†-Bw‡§	General Geology Laboratory (Dynamic and Historical) (4 cred.; all; with or after 1-2)				
	Sec. 1	I, II	MW	22P	Ar
	2	VI, VII	MW	22P	Ar
1w-2s*†	General Geology (Dynamic and Historical) (See 1f-2w)				
		IV	MWF	110P	Mr. Hanley
Aw†-Bs‡§	General Geology Laboratory (Dynamic and Historical) (See Af-Bw)				
		VI, VII	WF	22P	Ar
1w-3s*†	General Geology (Dynamic and Economic)—A synoptical treatment of the materials of the earth and the origin, distribution, and occurrence of metals, nonmetals, coal, and petroleum (6 cred.; all; no prereq.)				
		II	MWF	110P	Mr. Emmons
Aw†-Cs‡§	General Geology Laboratory (Dynamic and Economic) (4 cred.; all; with or after 1-3)				
		I, II	TTh	20P	Ar
1s*	General Geology (Dynamic) (1st qtr. of 1-2 or 1-3. See 1f-2w or 1w-3s)				
		III	MWF	110P	Ar

* For a three-quarter sequence, Course 2 may be followed by Course 3 and Course 3 by Course 2.

† To receive credit for any part of this course a student must complete the parts preceding the dagger, except that students in Forestry may take 1 and A for 5 credits without completing 2 and B.

‡ A fee of \$1 is charged for this course.

§ Course A-B or Course A-C must be completed if geology is offered as the required laboratory science.

¶ Girls may take trip only when there are enough for a separate section. They should consult the major adviser.

No.	Title	Hour	Day	Bldg.	Instructor
As†§	General Geology Laboratory (Dynamic) (1st qtr. of A-B or A-C. See Af-Bw or Aw-Cs)	III, IV	TS	22P	Ar
2f*	General Geology (Historical) (2nd qtr. of 1-2. See 1f-2w)	III	MWF	218P	Mr. Hanley
Bf†§	General Geology Laboratory (Historical) (2nd qtr. of A-B. See Af-Bw)	III, IV	TS	20P	Mr. Hanley
8f||	Introductory Geology—A short introductory course as an elective. Principles of earth sculpture; topographic changes and their causative agents; dynamic, structural, and historic geology (5 cred.; all; no prereq.)				
	Sec. 1	I	MTWThF	2P	Mr. Thiel
	2	IV	MTWFS	2P	Ar
8w||	Introductory Geology (See 8f)	IV	MTWFS	2P	Ar
8s||	Introductory Geology (See 8f)				
	Sec. 1	II	MTWThF	2P	Mr. Thiel
	2	VI	MTWThF	2P	Ar
23f†-24w††	Elements of Mineralogy (8 cred.; soph., jr., sr.; prereq. a course in chemistry)				
	Schedule for 23f Lect.	I	TThS	210P	Mr. Gruner
	Rec.	VIII	Th	110P	
	Lab. Sec. A	III, IV	TS	100P	
	B	VI, VII	TTh	100P	
	Schedule for 24w Lect.	I	TThS	210P	Mr. Gruner
	Rec.	VIII	M	210P	
	Lab. Sec. A	III, IV	TS	100P	
	B	VI, VII	MW	100P	

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

51	<i>Elements of Paleontology</i> (5 cred.; jr., sr.; prereq. 1 and Zool. 1-2-3) (<i>Offered in alternate years. Not offered in 1942-43</i>)				
61f	Blowpipe Analysis (3 cred.; jr., sr.; prereq. 24)				
	Lect.	II	TThS	100P	Mr. Gruner
	Lab.	VII, VIII	F	100P	
		IX	Th	100P	
91f-92w-93s	Index Fossils of North America (9 cred.; jr., sr.; prereq. 2, 3, or 51)				
	Schedule for 91f Lect.	VI	F	210P	Mr. Stauffer
	Lab.	VI, VII	MW	105P	
	Schedule for 92w and 93s Lect.	I	F	210P	Mr. Stauffer
	Lab.	VI, VII	MW	105P	
100||	Field Work in Northern Minnesota—July 15 to 30, approximately. Students interested in this field trip should consult the department (3 cred.; jr., sr.; prereq. 105)				
			Ar		Mr. Gruner, Mr. Thiel
101f-102w	Sedimentation (6 cred.; jr., sr., grad.; prereq. 24)				
	Schedule for 101f Lect.	VIII	MW	210P	Mr. Thiel
		IX	F	210P	
	Schedule for 102w Lect.	VI	T	208P	Mr. Thiel
	Lab.	VII, VIII	TTh	208P	
103w-104s	Micropaleontology (6 cred.; jr., sr., grad.; prereq. 51 or 91)				
		II, III	TThS	103P	Mr. Stauffer

* For a three-quarter sequence, Course 2 may be followed by Course 3 and Course 3 by Course 2.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 is charged for this course.

§ Course A-B or Course A-C must be completed if geology is offered as the required laboratory science.

¶ A more comprehensive report will be required for Graduate School credit.

|| Not open to students who have had Course 1. Does not satisfy the Junior College requirement for science. Cannot be followed by Course 1 for credit. May be followed by Course 2 or by Course A with instructor's permission.

No.	Title	Hour	Day	Bldg.	Instructor
105s	Rock Study (2 cred.; jr., sr., grad.; prereq. 24)				
	Lect.	I	TS	210P	Mr. Grout
	Lab.	I, II	Th	200P	
106f	Petrography (3 cred.; jr., sr., grad.; prereq. 105)				
	Sec. 1	I, II	Th	200P	Mr. Grout
		VI, VII	M	200P	
	2	VI, VII	TTh	200P	Mr. Grout
107f-108w-109s	Paleontologic Practice (9 cred.; jr., sr., grad.; prereq. 91-92-93)				
		Ar	Ar	105P	Mr. Stauffer
110f	Economic Geology (3 cred.; jr., sr., grad.; prereq. 24)				
		I	TThS	110P	Mr. Schwartz
111w	Ore Deposits (3 cred.; sr., grad.; prereq. 2 or 3, and 105)				
		I	TThS	110P	Mr. Emmons
112s	Geology of Petroleum (3 cred.; sr., grad.; prereq. 111)				
		I	TThS	110P	Mr. Emmons
114s	Geology of Minnesota and Adjoining Areas (3 cred.; jr., sr., grad.; prereq. 105)				
		VII	MWF	210P	Mr. Thiel
118	<i>Principles of Geomorphology</i> —Principles of physiography of the lands, or geomorphology. A study of the form and structure of plains-plateaus, volcanoes, and the different types of mountains. The normal or fluvial, glacial, marine, and arid cycles of erosion and the resulting land forms. (3 cred.; jr., sr., grad.; prereq. 2 or 3 or 13) (<i>Offered in alternate years. Not offered in 1942-43</i>)				
119s	Geomorphology of the United States—A regional study of the United States by geomorphic or physiographic units. The development of the surface features as affected by rock structure and geologic history. Discussion of the principal problems presented by each area. (3 cred.; jr., sr., grad.; prereq. 2 or 3 or 13)				
		II	TThS	220P	Mr. Hanley
120	<i>Glacial Geology</i> —Nature and process of glacial action. Land forms resulting from alpine and continental glaciers. Characters and distribution of Pleistocene and earlier glacial deposits. (3 cred.; jr., sr., grad.; prereq. 2 or 3 or 13) (<i>Not offered</i>)				
121f	Crystallography (3 cred.; jr., sr.; prereq. Math. 7 and Inorg. Chem. 6-7-8 or 9-10)				
		Ar	Ar	100P	Mr. Gruner
124w	Metamorphic Geology (3 cred.; jr., sr., grad.; prereq. 2 or 3, and 105)				
		II	MWF	218P	Mr. Schwartz
125s	Structural Geology (3 cred.; jr., sr., grad.; prereq. 2 or 3, and 105)				
		II	MWF	210P	Mr. Schwartz
131w-132s	Advanced Petrology (8 cred.; jr., sr., grad.; prereq. 106)				
	Schedule for 131w Lect.	III	TThS	210P	Mr. Grout
	Rec.	VI	M	210P	
	Lab.	VI, VII	ThF	200P	
	Schedule for 132s Lect.	III	TThS	210P	Mr. Grout
	Rec.	VI	M	210P	
	Lab.	VI, VII	ThF	200P	
137f	Testing Economic Minerals (3 cred.; jr., sr., grad.; prereq. 2 or 3, and 105)				
	Lect.	Ar	Ar	100P	Mr. Gruner
	Lab.	Ar	Ar	100P	
140w-141s	Applied Petrography (6 cred.; jr., sr., grad.; prereq. 131)				
	Schedule for 140w Lect.	II	F	200P	Mr. Grout
	Lab.	I, II	MW	Ar	
	Schedule for 141s Lect.	II	F	200P	
	Lab.	I, II	MW	Ar	
144f	Interpretation of Geologic Maps—Study and problems in construction and interpretation of various types of geologic maps. Recognition of structural and stratigraphic relations. (4 cred.; jr., sr., grad.; prereq. 2 or 13)				
		VI, VII, VIII, IX	WF	220P	Mr. Hanley
145w	Interpretation of Topographic Maps—Application of the principles of geomorphology to the interpretation of topographic maps. Practice in the recognition of land forms. Determination of underground structures and evolution of topography from surface contours. (2 cred.; jr., sr., grad.; prereq. 2 or 13)				
		VI, VII, VIII, IX	W	220P	Mr. Hanley
150*	Field Geology (Black Hills)—June 15 to July 15, approximately (Jr., sr., grad.; prereq. 125)				
		Ar	Ar	Ar	Mr. Schwartz

* A maximum of 6 credits will be granted after field report is completed. The course will not be given for fewer than six students.

No.	Title	Hour	Day	Bldg.	Instructor
151f-152w-153s	Advanced General Geology (9 cred.; jr., sr., grad.; prereq. 2 or 3)	III	MWF	210P	Mr. Stauffer
161w	Crystal Structure (3 cred.; jr., sr., grad.; prereq. 121, elem. phys. and anal. geom.)	Ar	Ar	Ar	Mr. Gruner
166f,w-167w,s	Mineralography (6 cred.; sr., grad.; prereq. 111, 131)	Ar	Ar	207P	Mr. Schwartz
170f,w,s	Geologic Problems (3 cred.; jr., sr., grad.; prereq. permission of major adviser)	Ar	Ar	Ar	Ar

GEOPHYSICS

See Physics, page 77.

GERMAN

Major adviser in the College of Science, Literature, and the Arts.—Professor Burkhard.

Major sequence in the College of Science, Literature, and the Arts.—Eighteen credits from Group A or Group B, and 15 additional credits in courses numbered 50 or above.

A. Courses 50-51-52, 53-54-55, 56-57, 58, 70, 80.

B. Courses 60, 61, 62, 63, 64, 65, 68, 70, 77.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education.—Professor Burkhard.

Requirements for a teacher's certificate.—Major recommendation: Courses 50-51-52, 53-54-55, 56-57, 58, 68, and 15 additional credits in courses numbered 50 or above.

Minor recommendation.—Courses 50-51-52, 58, and 8 additional credits in courses numbered 50 or above.

Sequence of courses for academic students.—Without entrance German: Courses 1, 2, 3, 4, other courses numbered 50 or above. With one year of entrance German: Courses 2, 3, 4, other courses numbered 50 or above. With two years of entrance German: Courses 3, 4, other courses numbered 50 or above. With three years of entrance German: Course 4 and other courses numbered 50 or above. With four years of German: courses numbered 50 or above.

Sequence of courses for premedical students.—Without entrance German: Courses 1, 2, 3, and 30-31-32 or 33-34. With one year of entrance German: Courses 2, 3, and 30-31-32 or 33-34. With two years of entrance German: Courses 3, and 30-31-32 or 33-34. With three years of entrance German: Courses 30-31-32 or 33-34.

Junior College Courses

1f	Beginning A (5 cred.; all; no prereq.)	I	MTWThF	212F	Ar
		II	MTWThF	213F	Ar
		III	MTWThF	209F	Ar
		VI	MTWThF	207F	Ar
1w	Beginning A (See 1f)	I	MTWThF	306F	Ar
		II	MTWThF	209F	Ar
1s	Beginning A (See 1f)	II	MTWThF	101F	Ar
2f	Beginning B (5 cred.; all; prereq. 1 or one year of high school German)	III	MTWThF	212F	Ar

No.	Title	Hour	Day	Bldg.	Instructor
2w	Beginning B (See 2f)	I	MTWThF	212F	Ar
		II	MTWThF	213F	Ar
		III	MTWThF	209F	Ar
		VI	MTWThF	207F	Ar
2s	Beginning B (See 2f)	I	MTWThF	15F	Ar
		II	MTWThF	209F	Ar
3f§	Beginning C (5 cred.; all; prereq. 2 or two years of high school German)	I	MTWThF	213F	Ar
		VII	MTWThF	209F	Ar
		II	MTWThF	209½F	Ar
		IV	MTWFS	209½F	Ar
	(Premed. students only)§				
	(Premed. students only)§				
3w	Beginning C (See 3f)				
3s	Beginning C (See 3f)	III	MTWThF	212F	Ar
		I	MTWThF	212F	Ar
		II	MTWThF	213F	Ar
		III	MTWThF	209F	Ar
4f	Intermediate German (5 cred.; all; prereq. 3 or three years of high school German)	VI	MTWThF	207F	Ar
		II	MTWThF	212F	Ar
4w	Intermediate German (See 4f)	III	MTWThF	209½F	Ar
		I	MTWThF	213F	Ar
4s	Intermediate German (See 4f)	VII	MTWThF	209F	Ar
		III	MTWThF	212F	Ar
20f-21w-22s	Basic Military and Naval German (9 cred.; open to students in Institute of Technology, and to others by special permission of German Dept.; S.L.&A. students who want to begin the study of German should take Course 1; no prereq.)				
24f-25w-26s	Chemical German (9 cred.; chemists, miners; no prereq.)	VII	MWF	213F	Ar
		IV	MWF	113F	Ar
		V	MWF	209½F	Ar
24af-25aw-26as	Chemical German (12 cred.; pharmacists and agricultural students; no prereq.)	IV	MTWF	124F	Ar
27f-28w-29s	Chemical Prose (9 cred.; chemists, pharmacists, miners; prereq. two years of high school German or one year of college German)	IV	MWF	209F	Ar
30f-31w-32s	Medical German (9 cred.; premed.; prereq. 3)	II	MWF	207F	Ar
		IV	MWF	213F	Ar
33w-34s	Medical German (10 cred.; premed.; prereq. 3)	II	MTWThF	209½F	Ar
		IV	MTWFS	209½F	Ar
41f-42w-43s	Readings from German Chemical Periodicals (6 cred.; sr.; prereq. 26 or equiv.)	IV	TS	Ar	Ar
45f-46w-47s	Advanced Military and Naval German (9 cred.; all; prereq. 2 or two years of high school German)	II	MWF	Ar	Ar

Senior College Courses

Senior College courses with numbers less than 100 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

50f-51w-52s	Composition (6 cred.; jr., sr.; prereq. 4)				
53f-54w-55s	Conversation (3 cred.; jr., sr.; prereq. 52)	I	MW	207F	Mr. Downs
		VI	TTh	304F	Mr. Holske

§ For premedical students the winter quarter continuation of 3f is 33w.

No.	Title	Hour	Day	Bldg.	Instructor
56f-57w	Essay Writing (6 cred.; jr., sr.; prereq. 52)	III	TThS	207F	Mr. Pfeiffer
58s	German Pronunciation (2 cred.; jr., sr.; prereq. 4)	III	TTh	207F	Mr. Meessen
59w,s	German Pronunciation and Diction (Open only to candidates for the German play.) (1 or 2 cred.; jr., sr.; prereq. 3)	Ar	Ar	Ar	Ar
60f	Narrative Prose (3 cred.; all; prereq. 4 or four years of high school German)	II	MWF	209F	Mr. Holske
60w	Narrative Prose (See 60f)	II	MWF	212F	Mr. Holske
60s	Narrative Prose (See 60f)	VII	MWF	209½F	Mr. Holske
62s	Nineteenth-Century Prose (3 cred.; jr., sr.; prereq. 3 cred. above 59)	II	MWF	212F	Mr. Pfeiffer
63f	Classic Drama (3 cred.; jr., sr.; prereq. 60 or 4 with a grade of B)	IV	MWF	207F	Mr. Meessen
64w	Nineteenth-Century Drama (3 cred.; jr., sr.; prereq. 3 cred. above 59)	IV	MWF	207F	Mr. Meessen
65s	Modern Drama (3 cred.; jr., sr.; prereq. 3 cred. above 59)	IV	MWF	207F	Mr. Meessen
68w	Survey of German Literature (3 cred.; jr., sr.; prereq. 6 cred. above 59)	III	MWF	209½F	Mr. Burkhard
77s	Faust I (3 cred.; jr., sr.; prereq. 63 and 3 additional cred. above 59)	III	MWF	209½F	Mr. Burkhard
90-91-92f,w,s	Reading in the Student's Major Field (or in Military or Naval German) (1 cred. per qtr.; jr., sr.; prereq. 4 and consent of instructor)	Ar	Ar	Ar	Ar
110-111-112	<i>Introduction to Germanic Philology</i> (9 cred.; sr., grad.; prereq. 68 and 6 cred. above 59) (<i>Not offered</i>)				
115-116-117	<i>Middle High German Literature</i> (9 cred.; sr., grad.; prereq. 120 and 11 cred. above 59) (<i>Not offered</i>)				
118	<i>Germanic Heroic Poetry</i> (3 cred.; sr., grad.; prereq. 68 and 9 cred. above 59) (<i>Not offered</i>)				
119s	Germanic Mythology (The same as Scandinavian 182) (3 cred.; sr., grad.; prereq. 6 cred. above 59)	Ar	Ar	Ar	Mr. Reichardt
120f-121w- 122s	Proseminar: History of German Literature (9 cred.; sr., grad.; prereq. 68 and 9 cred. above 59)	II	TThS	207F	Mr. Reichardt, Mr. Holske, Mr. Pfeiffer
140-141-142	<i>Early High German Literature, 1500-1700</i> (9 cred.; sr., grad.; prereq. 121 and 11 cred. above 59) (<i>Not offered</i>)				
143f-144w-145s	The Classical Period: Lessing, Wieland, Herder (9 cred.; sr., grad.; prereq. 121 and 11 cred. above 59)	VIII, IX, X	M	Ar	Mr. Holske
150f-151w-152s	Die Novelle (9 cred.; sr., grad.; prereq. 122 and 11 cred. above 59)	VIII, IX, X	T	Ar	Mr. Burkhard
153-154-155	<i>Austrian Drama</i> (9 cred.; sr., grad.; prereq. 122 and 11 cred. above 59) (<i>Not offered</i>)				
160-161-162	<i>Lyric Poetry</i> (9 cred.; sr., grad.; prereq. 68 and 11 cred. above 59) (<i>Not offered</i>)				
163-164-165	<i>German and English Literary Relations, 17th, 18th, 19th Centuries</i> (9 cred.; sr., grad.; prereq. 68 and 11 cred. above 59) (<i>Not offered</i>)				
173-174-175	<i>The Modern Novel, 1890-1930</i> (9 cred.; sr., grad.; prereq. 122 and 11 cred. above 59) (<i>Not offered</i>)				
180f-181w-182s	The Romantic School in Germany (9 cred.; sr., grad.; prereq. 122 and 11 cred. above 59)	VIII, IX, X	F	328Lib	Mr. Pfeiffer
183-184-185	<i>Gottfried Keller and Conrad Ferdinand Meyer</i> (9 cred.; sr., grad.; prereq. 122 and 11 cred. above 59) (<i>Not offered</i>)				

No.	Title	Hour	Day	Bldg.	Instructor
192f	Gothic—Introduction to Germanic linguistics (The same as Scandinavian 192) (4 cred.; sr. with completed major sequence, grad.)	Ar	Ar	Ar	Mr. Reichardt
193w	Gothic Texts (2 cred.; sr., grad.; prereq. 192)	Ar	Ar	Ar	Mr. Reichardt
194s	Old Saxon (3 cred.; sr., grad.; prereq. 192)	Ar	Ar	Ar	Mr. Reichardt
195w	Introduction to Old Norse Language and Literature (The same as Scandinavian 195) (4 cred.; sr., grad.; prereq. 192)	Ar	Ar	Ar	Mr. Reichardt
196s	Eddic Poetry (The same as Scandinavian 196) (3 cred.; sr., grad.; prereq. 195)	Ar	Ar	Ar	Mr. Reichardt
196a	<i>Old Norse Literature</i> (The same as Scandinavian 180 (4 cred.; sr., grad.; prereq. 8 cred. in literature) (<i>Not offered</i>))				
197-198-199	<i>Middle High German</i> (9 cred.; sr. with completed major sequence, grad.) (<i>Not offered</i>)				

Primarily for Graduate Students

209-210-211	<i>Old High German</i> (9 cred.; sr. with completed major sequence, grad.) (<i>Not offered</i>)
218-219-220	<i>Seminar: Runic Inscriptions</i> (The same as Scandinavian 230-231-232) (9 cred.; grad.; prereq. two Germanic dialects) (<i>Not offered</i>)
253-254-255	<i>Nineteenth-Century Drama: Kleist, Grillparzer, Hebbel</i> (9 cred.; grad.; prereq. 122 and 11 cred. above 59) (<i>Not offered</i>)

GREEK

See Classics, page 34.

HISTORY

Major advisers in the College of Science, Literature, and the Arts.—Professor Shippee; Associate Professors Osgood and Steefel.

Major sequence in the College of Science, Literature, and the Arts.—Students will take the equivalent of at least two nine-credit courses numbered from 50 to 100. These will normally come in the junior year. In the senior year students, if they have maintained to the end of the junior year an honor point average of 1.5 in all work, will take at least one course numbered 150 or above; all other majors in history will take an additional number of courses with numbers 50 to 100 in the senior year, but will not take courses numbered 150 or above. Normally a history major will consist of Senior College courses aggregating at least 27 credits.

(Prerequisites: Course 1-2-3 (twelve credits) or the old Course 1-2 (ten credits) or 4-5-6 or 14-15-16, and 20-21-22.)

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education.—Professor Krey.

Requirements for a teacher's certificate.—Major recommendation: a minimum of 45 credits; at least 18 credits must be in Senior College courses.

Minor recommendation: a minimum of 18 credits of which at least 9 credits must be in Senior College courses.

No major recommendation to teach history will be given unless the candidate has taken the general course in American history, History 20-21-22, or equivalent.

(Prerequisites: Course 1-2-3 (twelve credits) or the old Course 1-2 (ten credits) or 4-5-6 or 14-15-16, and 20-21-22.)

Students will take at least two of the courses numbered from 50 to 100. These will normally come in the junior year. In the senior year students, if they have maintained

to the end of the junior year an honor point average of 1.5 in all work, will take at least one course numbered 150 or above; all other majors in history will take an additional number of survey courses in the senior year, but will not take courses numbered 150 or above.

For a specialized curriculum in social studies see the Bulletin of the College of Education.

Students planning to do advanced work in history should get a reading knowledge of French and German in their early undergraduate years.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w-3s†	European Civilization (12 cred.; all; no prereq.)				
	Lect.	II	TThS	BuAud	Mr. Burt
	Rec. Secs.*	I	M	202EdH	
		I	W	202EdH	
		II	M	202EdH	
		II	W	202EdH	
		II	F	202EdH	
		III	M	202EdH	
		III	W	202EdH	
		III	F	202EdH	
		IV	M	202EdH	
1w-2s	European Civilization (2 qtrs. of 1-2-3. (See 1f-2w-3s))				
	Lect.	II	MWF	206Pt	Mr. Deutsch
	Rec. Secs.*	II	T	209EdH	
		II	Th	209EdH	
		III	T	209EdH	
		III	Th	209EdH	
		VI	T	209EdH	
3f	European Civilization (3rd qtr. of 1-2-3. See 1f-2w-3s)				
	Lect.	II	MWF	206Pt	Mr. Deutsch
	Rec. Secs.*	II	T	209EdH	
		II	Th	209EdH	
		III	T	209EdH	
4f-5w-6s†	English History—England since prehistoric times (9 cred.; all; no prereq.)				
	Lect.	II	MW	BuAud	Mr. Burt
	Rec. Secs.*	I	F	200Pt	
		II	F	209EdH	
		II	Th	202EdH	
11f-12w-13s†	Medieval History—300-1560 (9 cred.; for music and architecture students only; no prereq.)				
		IV	MWF	221Bu	Miss Thompson
		VII	TTh	211Bu	Mr. Jones
		VII	W	209EdH	
14f-15w-16s†	Ancient Civilization (9 cred.; all; no prereq.)				
	Lect.	VII	TTh	211Bu	Mr. Jones
	Rec. Secs.*	VII	W	209EdH	
17s	Social and Economic History of Modern Europe—Since 1500 (5 cred.; 3rd qtr. fr., soph., jr., sr.; no prereq. Not open to students who have taken Econ. 1)				
	Lect.	II	TThS	206Pt	Mr. Heaton
	Rec. Secs.*	I	MW	200Pt	
		II	MW	209EdH	
		VII	TTh	112Bu	

* Recitation sections in Courses 1f, 1w, 3f, 4f, 14f, and 17s will not meet until after the first lecture.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

No.	Title	Hour	Day	Bldg.	Instructor
20f-21w-22s†	American History (9 cred.; soph., jr., sr.; no prereq.)				
	Sec. 1	I	MWF	112Bu	Mr. Osgood
	2	I	MWF	111Bu	Mr. Stephenson
	3	VII	MWF	112Bu	Mrs. Tyler
	4	VII	MWF	111Bu	Mr. Shippee

Senior College Courses

Except where otherwise stated, there are no prerequisites for the courses numbered 50 to 100. The examination at the end of the course will cover the work of the three terms, and no final grade will be assigned until the whole course is completed. In exceptional cases students may enter the winter quarter, but in that event must read to cover the work of the first quarter.

Course 70-71-72 is open to prelegal sophomores who have completed Course 4-5-6 or Course 1-2-3 or the old Course 1-2 (ten credits) with a grade of at least C, and also to prelegal sophomores who have an average grade of C in all their work, even if that work includes no course in history. Senior College courses with numbers less than 100 are open to third quarter sophomores who have an average grade of at least C in 9 credits of history. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

50-51-52†	<i>History of Greece to 200 B.C.</i> (9 cred.; jr., sr.) (<i>Not offered</i>)				
50a-51a-52a	<i>History of Rome</i> (9 cred.; jr., sr.) (<i>Not offered</i>)				
50bf-51bw-52bs†	History of the Ancient Near East (9 cred.; jr., sr.)	I	TThS	112Bu	Mr. Jones
53f-54w-55s†	Medieval European History—300-1300 (9 cred.; jr., sr.)	III	MWF	112Bu	Mr. Krey
53a-54a-55a†	<i>Renaissance and Reformation—1300-1648</i> (9 cred.; jr., sr.) (<i>Not offered</i>)				
56f-57w-58s†	Early Modern European History—1559-1815 (9 cred.; jr., sr.)	IV	MWF	111Bu	Mr. Steefel
56af-57aw-58as†	History of Russia (9 cred.; jr., sr.)	VII	MWF	209Bu	Mr. Steefel
59-60-61†	<i>Europe in the Nineteenth Century</i> (9 cred.; jr., sr.) (<i>Not offered</i>)				
62-63-64†	<i>European Expansion</i> (9 cred.; jr., sr.) (<i>Not offered</i>)				
65f-66w-67s‡	Europe in the Twentieth Century (9 cred.; jr., sr.)	I	MWF	209Bu	Mr. Deutsch
68w-69s†	United States since Reconstruction (6 cred.; jr., sr.)	VII	MWF	221Bu	Mr. Stephenson
70f-71w-72s†	English Constitutional History (9 cred.; open to prelegal soph. with at least a C average in Courses 20-21-22, 1-2-3, or in all their college work, and to all jrs. and srs.)				
	Sec. 1	I	MWF	211Bu	Miss Thompson
	2	I	MWF	209EdH	Mr. Willson
73f-74w-75s†	England since 1485 (9 cred.; jr., sr.)	II	MWF	111Bu	Mr. Willson
76f-77w-78s†	History of Canada and Canadian-American Relations (9 cred.; jr., sr.)	III	TThS	221Bu	Mr. Burt
80f-81w-82s†	Introduction to Economic History (9 cred.; jr., sr.)	I	TThS	111Bu	Mr. Heaton
83f-84w-85s†	American Economic and Social History (9 cred.; jr., sr.)	III	TThS	211Bu	Mr. Loehr
83aw	American Agricultural History (3 cred.; soph., jr., sr., open only to students in the College of Agriculture, Forestry, and Home Economics; no prereq.)	I	MWF	102Hr	Mr. Loehr

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ Students may take, and get credit for, 65f-66w or 66w-67s if they cannot take the whole course 65f-66w-67s.

No.	Title	Hour	Day	Bldg.	Instructor
86f-87w-88sf	The American Colonies (9 cred.; jr., sr.)	II	MWF	112Bu	Mrs. Tyler
90f-91w-92sf	West in American History (9 cred.; jr., sr.)	III	TThS	111Bu	Mr. Osgood
90af-91aw-92as†	Minnesota and the Northwest (9 cred.; jr., sr.)	II	TThS	111Bu	Mr. Blegen
93f-94w-95sf	American Diplomatic History (9 cred.; jr., sr.)	III	MWF	221Bu	Mr. Shippee
93a-94a-95af	<i>Survey of Latin-American History</i> (9 cred.; jr., sr.) (Not offered)				
96f-97w-98sf	History of the Americas—This course, dealing with the Western Hemisphere as a whole, is open to any senior with a B average in his major. It presupposes a background in history of the Americas which, if lacking, must be obtained by reading in advance of lectures on the various topics (9 cred.; sr.)	II	TThS	112Bu	Mr. Jones, Mr. Lochr
Courses numbered 150 to 200 are open to seniors, and to graduate students upon recommendation of advisers; prerequisites are appropriate lecture courses and consent of the department.					
150f-151w-152sf	Selected Readings in Ancient History—Cultural history of Egypt (9 cred.; sr., grad.) (The same as Anthropology 135-136-137)	VIII, IX	W	Ar	Mr. Jones, Mr. Cline
153f-154w-155sf	Selected Readings in Medieval and Renaissance History (9 cred.; jr., grad.)	VIII, IX	W	328Lib	Mr. Krey
156f-157w-158sf	Selected Readings in Modern European History (9 cred.; sr., grad.)				
	Twentieth-Century Europe	VIII, IX	M	339Lib	Mr. Deutsch
	Nineteenth-Century Europe	VIII, IX	T	339Lib	Mr. Steefel
170f-171w-172sf	Selected Readings in English History—Tudor and Stuart periods (9 cred.; sr., grad.)	VIII, IX	Th	314Lib	Mr. Willson
176f-177w-178sf	Selected Readings in Canadian History (9 cred.; sr., grad.)	I, II	Th	219Bu	Mr. Burt
180f-181w-182sf	Selected Readings in European Economic History (9 cred.; sr., grad.)	VI, VII	T	111Bu	Mr. Heaton
183f-184w-185sf	Selected Readings in American Economic History (9 cred.; sr., grad.)	VI, VII	Th	111Bu	Mr. Lochr
190f-191w-192sf	Selected Readings in American History (9 cred.; sr., grad.)				
	The Slavery Controversy	VI, VII	T	328Lib	Mr. Stephenson
	Civil War and Reconstruction	III, IV	T	328Lib	Mrs. Tyler
	American Frontier to 1760	VIII, IX	W	339Lib	Mr. Osgood

HOME ECONOMICS

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

The program of courses in Home Economics (with course numbers and titles, credits, prerequisites, schedule of hours and days, etc.) is given in the College of Agriculture, Forestry, and Home Economics section of this bulletin.

A statement at the beginning of that program tells which courses are open to students of the colleges on the Minneapolis campus and under what conditions the students may register for them.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

Science, Literature, and the Arts students who want to take Courses 1, 2, 15, 20, 30, 31, 34, 56A-56B, 120 may register for them on their regular registration days provided they get written permission in 106 Folwell Hall.

Science, Literature, and the Arts students who want other courses in home economics should inquire at 106 Folwell Hall as to how and when they may register for those courses.

HOW TO STUDY

No.	Title	Hour	Day	Bldg.	Instructor
1f§	How To Study (2 cred.; prereq. permission of instructor. See § footnote.)				
	Sec. 1	I	MWF	104J	Mr. Clark
	2	II	MWF	104J	and others
	3	VII	MWF	104J	
1w§	How To Study (See 1f)				
	Sec. 1	I	MWF	104J	Mr. Clark
	2	II	MWF	104J	and others
1s§	How To Study (See 1f)				
		I	MWF	104J	Mr. Clark and others

HUMAN ANATOMY

See Anatomy (Human), page 19.

HUMAN PHYSIOLOGY

See Physiology, page 81.

ITALIAN

See Romance Languages, page 94.

JOURNALISM

Major advisers in the College of Science, Literature, and the Arts.—Professors Casey, Barnhart, Charnley, and Nafziger; Assistant Professors Ford and Kildow.

Major sequence in the College of Science, Literature, and the Arts.—Courses 51, 52 (for men), 55, 69, or 73, 101 (for men), 109-110, 112, 140-141, and 9 additional credits to be chosen in conference with the adviser. Students of marked ability may substitute for these 9 additional credits in journalism Senior College courses in other departments with the approval of the major adviser in journalism. Women students who do not elect Courses 52 and 101 must substitute other journalism courses of equivalent hours.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

The additional credits will be arranged to prepare students for the following types of journalistic work: (1) metropolitan journalism—news, editorial, business management, advertising, circulation, or press association work; (2) small daily and weekly journalism—editing and management; (3) journalism-advertising; (4) magazine writing, magazine editing—editorial direction and business management of trade, technical, and professional journals; (5) radio news processing and radio script writing; (6) public relations; (7) agricultural journalism—consult minor sequence requirements below and the Bulletin of the College of Agriculture, Forestry, and Home Economics; (8) teacher training in journalism—consult minor sequence requirements below and the Bulletin of the College of Education.

Freshmen who are interested in journalism or those who think that they may enter the school at a later time are urged to discuss their course programs with members of the journalism staff.

§ Registration is limited. Written permission from the instructor is necessary for admission. For Course 1f, students should inquire at 106 Folwell Hall; for Courses 1w and 1s, at 112 Psychology Building.

Students must have maintained a C average in all work to enter any journalism course, except by consent of the director of the school.

(Prerequisites: Courses 13, 14-15; or 12, 15; and Composition 27-28.) In addition to these prerequisites, the following Junior College courses are recommended as providing, in most cases, the best foundation for a major in journalism: Political Science 1-2-3, 7 and 25; Sociology 1 and 6; Psychology 1-2; History 20-21-22 or 1-2-3; Economics 6-7 (especially recommended for students specializing in journalism-business management and journalism-advertising).

Several courses offered by the School of Journalism give special attention to war-time problems. Among them are 78, 92, 111, and 130-131. Other courses of general interest are 5 and 103.

Adviser for students in all colleges.—Professor Casey.

Minor sequence.—For students in the College of Agriculture, Forestry, and Home Economics, the Institute of Technology, and the School of Business Administration: Courses 13, 41, 69, and 6 additional credits in Senior College journalism courses, to be chosen in conference with the adviser. Courses 78, 110, 111, and 112 are recommended.

Minor sequence in the College of Education.—Courses 13, 41, 69, 82, and at least 6 additional credits in Senior College journalism courses.

Course Ed.T. 74 offered by the School of Journalism and listed under "Methods and Directed Teaching" in the program of the College of Education (in this bulletin) is also required in this sequence.

Fees.—Students registered for any journalism course, except Course 5, are required to pay a general fee of \$1 a quarter, regardless of the number of courses pursued. Courses 41, 51-52, 55, 58, and 66 require laboratory fees in addition to the equipment fee of \$1.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
5s	The American Newspaper—A survey of the history, organization, and methods of contemporary journalism and an analysis of the relation of newspapers to their readers (3 cred.; soph. with average of C, jr., sr.; not open to journalism majors; no prereq.)				
	II		TThS	420MurH	Mr. Ford
12w†	Newspaper Reporting (5 cred.; substantially equivalent to 13, 14; soph., jr., sr., with average of C; prereq. Eng. A-B-C or Comp. 4-5-6 or exemption from English requirement, and consent of instructor)				
	Lect.	VI	MW	308MurH	Mr. Kildow
	Lab.	VI, VII, VIII	TTh	212MurH	
13f	Introduction to Reporting (for majors) (3 cred.; soph., jr., sr., with average of C; prereq. Eng. A-B-C or Comp. 4-5-6 or exemption from English requirement)				
	Sec. 1	VI, VII, VIII	MW	212MurH	Mr. Kildow
	2	I, II, III	TTh	212MurH	Mr. Charnley
	3	VII, VIII, IX	TTh	212MurH	Mr. Smith
13f	Introduction to Reporting (for minors) (3 cred.; soph., jr., sr., with average of C; prereq. Eng. A-B-C or Comp. 4-5-6 or exemption from English requirement)				
	I		MWF	308MurH	Mr. Ford
14w-15s†	Newspaper Reporting (for majors) (6 cred.; soph., jr., sr.; prereq. for 14, C average in 13 and in all work, or consent of instructor, and Comp. 27-28§; for 15, C average in 13-14 or 12 and in all work, or consent of instructor, and Comp. 27-28§)				
	Sec. 1 (winter)	VI, VII, VIII	MW	212MurH	Mr. Smith
	2 (winter)	I, II, III	TTh	212MurH	Mr. Charnley
	Sec. 1 (spring)	VI, VII, VIII	MW	212MurH	Mr. Nafziger
	2 (spring)	I, II, III	TTh	212MurH	Mr. Charnley
	3 (spring)	VII, VIII, IX	TTh	212MurH	Mr. Smith

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ May be taken at the same time.

¶ This course is intended only for winter quarter transfer students and others who for exceptional reasons cannot take 13 and 14. It should be followed by 15.

No.	Title	Hour	Day	Bldg.	Instructor
41w††††	Editing for Nonmajors (Not open to S. L. and A. students) (3 cred.; jr., sr.; prereq. 12 or 13)				
	Lect.	IV	MW	420MurH	Mr. Ford
	Lab. Sec. 1	VI, VII	T	207MurH	
	2	VIII, IX	W	207MurH	
	3	VI, VII	Th	207MurH	
	4	VIII, IX	F	207MurH	

Senior College Courses

Senior College courses in the School of Journalism are open to Junior College students only by special permission of the Student's Work Committee. See a statement on page 19.

51f†-52w†	News Editing (6 cred.; jr., sr.; prereq. 15)				
	Lect.	II	M	308MurH	Mr. Smith
	Lab. (Fall quarter)				
	Sec. 1	VIII, IX	M	206MurH	Mr. Nafziger
	2	II, III	T	206MurH	Mr. Wilson
	3	VII, VIII	T	206MurH	Mr. Kildow
	4	VII, VIII	Th	206MurH	Mr. Wilson
	5	VI, VII	F	206MurH	Mr. Smith
	Lab. (Winter quarter)				
	Sec. 1	VI, VII	M	206MurH	Mr. Wilson
	2	VI, VII	T	296MurH	Mr. Smith
	3	VII, VIII	Th	206MurH	Mr. Nafziger
	4	VI, VII	F	206MurH	Mr. Smith
	5	III, IV	S	206MurH	Mr. Wilson
51s†	News Editing (3 cred.; jr., sr.; prereq. 12 or 14)				
	Lect.	IV	M	308MurH	Mr. Kildow
	Lab. Sec. 1	VII, VIII	M	206MurH	Mr. Wilson
	2	II, III	T	206MurH	Mr. Wilson
	3	VII, VIII	Th	206MurH	Mr. Nafziger
55f,w,s††	Advertising and Newspaper Typography (3 cred.; jr., sr.; prereq. 15, or 13 and 41)				
	Lect.	VII	M	311MurH	Mr. Barnhart
	Lab. Sec. 1	VIII, IX	MW	315,320MurH	
	2	VI, VII	TTh	315,320MurH	
	3	I, II	WF	315,320MurH	
	4	VI, VII	WF	315,320MurH	
58w†	Advanced Typography (2 cred.; jr., sr.; prereq. 55 and consent of instructor)	Ar	Ar	315,320MurH	Mr. Barnhart
60-61-62	<i>The Weekly Newspaper</i> (9 cred.; jr., sr.; prereq. 15) (<i>Not offered</i>)				
65f*	Graphic Arts: Processes—Discussion of reproduction processes—letter press, planography, intaglio; also engravings, inks, paper stock, bindings, and miscellaneous printing operations. (3 cred.; jr., sr.; prereq. consent of major adviser in the School of Journalism or in the School of Business Administration)				
		IV	MWF	105MurH	Mr. Barnhart
66s†††	News Photography—The analysis, use, and influence of the news picture, with elementary instruction in the use of the news camera (for journalism majors only) (3 cred.; jr., sr.; prereq. consent of instructor)				
	Lect.	VII	M	308MurH	Mr. Smith
	Lab.	VII, VIII	WF	20MurH	
67f,w	Radio News Writing (2 cred.; jr., sr.; prereq. 15)				
		IV	WF	302MurH	Mr. Charnley
68s	Problems in Radio Writing (3 cred.; jr., sr.; prereq. 52 for men, 51 for women, and consent of instructor)				
		VI	MWF	302MurH	Mr. Charnley

* This course 65f is one of the three related courses of special interest to students of journalism and advertising. The other two, listed elsewhere in this bulletin, are Drawing 64w, Graphic Arts, and Business Administration 194s, Advanced Advertising Procedure.

† A fee of \$2 is charged for this course.

†† A fee of \$1 per credit is charged for this course.

††† A fee of \$5 is charged for this course.

†††† A fee of \$1 is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
69s	Newspaper and Magazine Articles (3 cred.; jr., sr.; prereq. 15 or 41)	I	MWF	311MurH	Mr. Kildow
70	<i>Business and Specialized Journalism</i> (3 cred.; jr., sr.; prereq. 15 or 69, or consent of instructor) (<i>Not offered</i>)				
73f-74w	Magazine Writing and Editing (6 cred.; jr., sr.; prereq. for 73, 15; for 74, 73 and consent of instructor)	VI	MWF	302MurH	Mr. Charnley
EdT74	Teachers Course in Journalism (This course is listed among the College of Education courses in another part of this bulletin. It is not regularly open to Science, Literature, and Arts students)				
76f	Critical Writing (3 cred.; jr., sr.; prereq. 15)	II	TThS	311MurH	Mr. Ford
77s	Legal Regulations Affecting the Press (3 cred.; jr., sr.; prereq. 51-52)	II	MWF	302MurH	Mr. Smith
78f	Public Relations (3 cred.; jr., sr.; prereq. 15)	I	MWF	311MurH	Mr. Kildow
82s	Supervision of School Publications (3 cred.; jr., sr.; prereq. 41 or 51-52)	VI	MWF	420MurH	Mr. Kildow
92f	Wartime Public Relations and Censorship—The purpose, structure, and functioning of the wartime public relations and propaganda agencies of the national government, the armed forces, etc. Restrictions on naval, military, and other information; wartime legal restrictions on freedom of expression (2 cred.; jr., sr. of all colleges who have not completed 91 or 130-131; no prereq.)	VII	TTh	105MurH	Mr. Casey and staff
93f§	Weekly Editorial Administration (3 cred.; jr., sr.; prereq. 51 or concurrent registration in 51 and 93)	II	TThS	308MurH	Mr. Barnhart
94w§	Newspaper Advertising (3 cred.; jr., sr.; prereq. 51)	II	TThS	308MurH	Mr. Barnhart
95s§	Circulation and Newspaper Management (3 cred.; jr., sr.; prereq. 51)	II	TThS	308MurH	Mr. Barnhart
96	<i>The Journalism of Finance and Commerce</i> (3 cred.; jr., sr.; prereq. 15 and 10 cred. in economics or business administration) (<i>Not offered</i>)				
99f,w,s	Readings in Journalism (Cred. ar., not to exceed 3; jr., sr.; prereq. consent of the director of the school)				Staff
101w	The Reporting of Public Affairs (3 cred.; jr., sr., grad.; prereq. 51-52 and 9 cred. in political science)	III	TThS	311MurH	Mr. Nafziger
103s	Literary Aspects of Journalism (3 cred.; jr., sr., grad.; prereq. Eng. 21-22 or 22-23)	IV	MWF	311MurH	Mr. Ford
104s	Advanced Newspaper Advertising (2 cred.; jr., sr., grad.; prereq. 52, 94, and consent of instructor)	VIII	TTh	420MurH	Mr. Barnhart
109w-110s	History of Journalism (6 cred.; jr., sr., grad.; prereq. 15)	III	MWF	105MurH	Mr. Ford
111f	International Communications and the Foreign Press—How the world's peace and war news is gathered and disseminated; the press and foreign affairs; the foreign press (for journalism majors) (3 cred.; jr., sr., grad.; prereq. 51 and a history or political science course in international relations, or consent of instructor)	III	MWF	311MurH	Mr. Nafziger
111w	International Communications and the Foreign Press (See 111f) (for non-journalism majors) (3 cred.; jr., sr., grad. of all colleges except those who have completed Journ. 91; no prereq.)	III	MWF	311MurH	Mr. Nafziger
112s	Current Newspaper Problems (3 cred.; sr., grad.; prereq. 140-141)	VI	TTh	105MurH	Mr. Casey and staff
114w	The Influence of the Newspaper (3 cred.; jr., sr., grad.; prereq. 15 or 41)	II	TThS	311MurH	Mr. Ford
130f-131w	Communication Agencies and Public Opinion (6 cred.; jr., sr., grad.; prereq. 15 cred. in the social studies and psychology)	II	MWF	311MurH	Mr. Casey

§ Two quarters of Courses 93, 94, 95 must be completed before credit is received for any quarter.

No.	Title	Hour	Day	Bldg.	Instructor
140f-141w†	Contemporary Affairs (9 cred.; sr., grad.; prereq. studies or consent of major adviser in journalism)			109-110 and 20	cred. in the social
	Lect.	VI	TTh	105MurH	Mr. Casey, Mr. Charnley, Mr. Nafziger, Mr. Smith
	Rec. Sec. 1	IV	T	302MurH	Mr. Casey
	2	VII	T	302MurH	Mr. Charnley
	3	IV	T	311MurH	Mr. Smith
	4	VII	T	311MurH	Mr. Nafziger

For Graduate Students Only

205f,w,s	Topics in International News Communications (3 cred.; seminar for grad. students; prereq. consent of director of the school)	Ar	Ar	405MurH	Mr. Nafziger
210f,w,s	Research in Newspaper Problems (2 cred.; seminar course for grad. students; prereq. consent of director of the school)	Ar	Ar	405MurH	Mr. Casey

LATIN

See Classics, page 34.

LIBRARY METHODS

Note.—For the special course in library training see the Bulletin of the College of Science, Literature, and the Arts. For professional courses in library instruction see the program of the Division of Library Instruction, page 9.

1f,w,s§	Use of Books and Libraries—Use of catalog, reference books, indexes, and bibliographies, for personal and class purposes. Preparation of reference lists. (2 cred.; fr., soph. only; no prereq.)				
	Sec. 1	II	MW	3Lib	Mr. Russell, Miss Moen
	2	IV	MW	3Lib	Mr. Shove, Miss Davenport

LINGUISTICS AND COMPARATIVE PHILOLOGY

Major adviser in the College of Science, Literature, and the Arts.—Professor Ogle.

Major sequence in the College of Science, Literature, and the Arts.—Normally a major will consist of 27 credits in the courses carrying Senior College credit, listed below, chosen after consultation with adviser.

ANTHROPOLOGY

105f	Elements of Language—A survey of speech sounds followed by practice in phonetic recording. Analysis of phonetic patterns in language. Practical work in dictation of Chippewa, Dakota, Finnish, and other languages (3 cred.; jr., sr., grad.; no prereq.)	II	MWF	6WeH	Mr. Mandelbaum
------	--	----	-----	------	----------------

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ For students in the College of Science, Literature, and the Arts. Others must obtain a special card from the Junior College office, 106 Folwell Hall.

CLASSICS

No.	Title	Hour	Day	Bldg.	Instructor
106w¶	General Linguistics (3 cred.; jr., sr., grad.; prereq. any two courses numbered above 50 in a foreign language)	IV	MWF	109F	Mr. Ogle
107s¶	Cultural Aspects of Language (3 cred.; jr., sr., grad.; prereq. any two courses numbered above 50 in a foreign language)	IV	MWF	109F	Mr. Ogle
133s	Vulgar Latin (Development of Latin into Romance) (3 cred.; jr., sr., grad.; open to advanced students of Latin or a Romance language with the consent of the instructor)	II	MWF	109F	Mr. Ogle

ENGLISH

100f	Old English (4 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	II	TWThF	316F	Mr. Clark
102w	Old English Poetry (3 cred.; jr., sr., grad.; prereq. 100)	II	MWF	316F	Mr. Kökeritz
103s	Beowulf (3 cred.; jr., sr., grad.; prereq. 100)	II	MWF	316F	Mr. Kökeritz
160-161	<i>History of the English Language</i> (6 cred.; jr., sr., grad.; prereq. 6 cred. above 50, including 100) (<i>Not offered</i>)				
165f	The Historical Study of Modern English (3 cred.; jr., sr., grad.; prereq. 6 cred. above 50)	VI	MWF	206F	Mr. Kökeritz
174	<i>American Usage</i> (3 cred.; jr., sr.; prereq. 6 cred. above 50) (<i>Not offered</i>)				

FRENCH

171f-172w-173s†	History of French Language (3 cred.; jr., sr., grad.; prereq. one year of Latin or permission of instructor)	VIII	Th	203F	Mr. Brackney
-----------------	--	------	----	------	--------------

GERMAN

110-111-112	<i>Introduction to Germanic Philology</i> (9 cred.; sr., grad.; prereq. 68 and 6 cred. above 59) (<i>Not offered</i>)				
192f	Gothic—Introduction to Germanic Linguistics (The same as Scandinavian 192) (4 cred.; sr. with completed major sequence, grad.)	Ar	Ar	Ar	Mr. Reichardt
193w	Gothic Texts (2 cred.; sr., grad.; prereq. 192)	Ar	Ar	Ar	Mr. Reichardt
194s	Old Saxon (3 cred.; sr., grad.; prereq. 192)	Ar	Ar	Ar	Mr. Reichardt
197-198-199	<i>Middle High German</i> (9 cred.; sr. with completed major sequence, grad.) (<i>Not offered</i>)				

SCANDINAVIAN

185	<i>History of Scandinavian Languages</i> (3 cred.; sr., grad.; prereq. Scand. 4-5-6 or 10-11-12 or at least one Germanic language) (<i>Not offered</i>)				
195w	Introduction to Old Norse Language and Literature (The same as German 195) (4 cred.; sr., grad.; prereq. 192 or permission of instructor)	Ar	Ar	Ar	Mr. Reichardt
196s	Eddic Poetry (The same as German 196) (3 cred.; sr., grad.; prereq. 195)	Ar	Ar	Ar	Mr. Reichardt

LINGUISTICS

121f-122w-123s†	Introduction to Arabic Grammar and Reading (9 cred.; jr., sr., grad.; prereq. two courses above 50 in any foreign language)	Ar	Ar	Ar	Mr. Cline
-----------------	---	----	----	----	-----------

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ This course can be used as a part of a minor only by students who are majoring in Classics.

No.	Title	Hour	Day	Bldg.	Instructor
131f-132w	Introduction to Sanscrit (4 cred.; sr. with permission of instructor, grad.; prereq. at least two Senior College courses in any Indo-European language)				
		Ar	Ar	Ar	Mr. Reichardt
134-135-136	Introduction to Old Irish Language and Literature (9 cred.; sr. with permission of instructor, grad.; prereq. at least two Senior College courses in any Indo-European language) (<i>Not offered</i>)				

Primarily for Graduate Students

CLASSICS

242w	Historical Latin Grammar (3 cred.)	VIII, IX	Th	110F	Mr. Cram
------	------------------------------------	----------	----	------	----------

FRENCH

201f-202w-203s	Old French Phonology and Morphology (6 cred.)	Ar	Ar	203F	Mr. Brackney
204f-205w-206s	Reading in Old French Literature (6 cred.)	Ar	Ar	203F	Mr. Brackney
207f-208w-209s	Old Provençal (6 cred.)	Ar	Ar	203F	Mr. Brackney

GERMAN

209-210-211	Old High German (9 cred.; sr. with completed major sequence, grad.) (<i>Not offered</i>)				
218-219-220	Seminar: Runic Inscriptions (9 cred.; grad.) (The same as Scandinavian 230-231-232) (<i>Not offered</i>)				

SPANISH

241-242-243	Old Spanish Philology (6 cred.) (<i>Not offered</i>)				
-------------	--	--	--	--	--

MATHEMATICS

Major advisers in the College of Science, Literature, and the Arts.—Professors Brink, Hart, and Jackson.

Major sequence in the College of Science, Literature, and the Arts.—Courses 50, 51, 62, 105; and either 15 additional credits in Senior College courses, other than 70, or 6 additional credits in Senior College courses, other than 70, together with 10 credits of Physics 101-103-105 or 9 credits of Biostatistics (Preventive Medicine and Public Health 110, 120, 130, 140).

(Prerequisites: Mathematics 6, 7, 30.)

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education.—Associate Professor Underhill.

Requirements for a teacher's certificate.—Major recommendation: entrance credit in solid geometry or its equivalent; Courses 50, 51, and 8 additional credits in courses numbered above 51.

Minor recommendation: entrance credit in solid geometry or its equivalent. Course 50 and 3 additional credits in courses numbered above 50.

Mathematics 20 is strongly recommended as an elective, to be taken preferably in the freshman or sophomore year, in connection with either a major or minor recommendation.

Placement tests.—In each of Courses 1, 6, 8, and 15 a placement test will be given at some time within the first two weeks of the quarter. Any student who fails in the test in Course 1 may be required to drop the course and to review his elementary mathematics before taking college mathematics. Any student who offers less than one year of high school higher algebra as a substitute for Course 1 and who fails the place-

ment test given in Course 6, 8, or 15 will be required to take Course 1 before taking more advanced mathematics. A student who has had a complete year of elementary algebra, and a corresponding course in higher algebra for one-half year, should be able to pass the placement test in Course 6, 8, or 15.

Prerequisites for any course in mathematics may be waived if a petition for registration in the course is granted by the department chairman.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f*	Higher Algebra (5 cred.; all; prereq. one yr. of elem. algebra§; open for credit to any student offering not more than one-half yr. of high school higher algebra for entrance)				
	Sec. 1	I	MTWThF	JAud	Ar
	2	III	MTWThF	105F	Ar
	3	VI	MTWThF	105F	Ar
	In choosing one of the sections of this course the student should be guided by the schedule of hours for its winter quarter continuation. The fall-winter sequences are: At I hour, 1f-6w, 1f-8w, and 1f-15w; at III hour, 1f-6w; at VI hour, 1f-6w.				
1w*	Higher Algebra (See 1f)				
	Sec. 1	IV	MTWFS	104F	Ar
	2	VI	MTWThF	105F	Ar
	In choosing one of the sections of this course the student should be guided by the schedule of hours for its spring quarter continuation. The winter-spring sequences are: At IV hour, 1w-6s; at VI hour, 1w-6s and 1w-8s.				
1s*	Higher Algebra (See 1f)				
	Sec. 1	I	MTWThF	301F	Ar
	2	VII	MTWThF	101F	Ar
6f**	Trigonometry (5 cred.; all; prereq. plane geometry and Course 1 or high school higher algebra§; open for credit even to students offering high school trigonometry for entrance)				
	Sec. 1	II	MTWThF	105F	Ar
	2	III	MTWThF	102F	Ar
6w**	Trigonometry (See 6f)				
	Sec. 1	I	MTWThF	101F	Ar
	2	III	MTWThF	125F	Ar
	3	VI	MTWThF	104F	Ar
6s**	Trigonometry (See 6f)				
	Sec. 1	IV	MTWFS	104F	Ar
	2	VI	MTWThF	105F	Ar
7f¶**	College Algebra (5 cred.; all; prereq. 6, or high school trigonometry if approved by the department chairman)				
	Sec. 1	II	MTWThF	125F	Ar
	2	VII	MTWThF	102F	Ar
7w¶**	College Algebra (See 7f)				
	Sec. 1	II	MTWThF	105F	Ar
	2	III	MTWThF	105F	Ar
7s¶**	College Algebra (See 7f)				
	Sec. 1	III	MTWThF	104F	Ar
	2	VII	MTWThF	102F	Ar
8f*¶	Commerce Algebra—College algebra including logarithms (5 cred.; primarily for pre-business students* but open also to others; prereq. 1, or high school higher algebra§)				
		VII	MTWThF	JAud	Ar
8w*¶	Commerce Algebra (See 8f)	I	MTWThF	JAud	Ar
8s*¶	Commerce Algebra (See 8f)	VI	MTWThF	104F	Ar
10w	Spherical Trigonometry (2 cred.; all; prereq. 6 or high school trigonometry if approved by the department chairman, and solid geometry or registration in solid geometry)				
		VII	TTh	104F	Ar

* Prebusiness students who elect mathematics to meet the requirement of 10 credits in mathematics or laboratory science, should take 1 and 8 if they have not had high school higher algebra, and 8 and 20 if they have had high school higher algebra.

§ Read the announcement about placement tests which precedes the heading Junior College Courses.

¶ No student may receive credit for both Courses 7 and 8.

** No student may receive credit for both Course 6-7 and Course 15-16. If a student has taken Course 6 and wants more mathematics, he should take Course 7; if he has taken Course 15-16 and wants more mathematics, he should consult the chairman of the department, Room 119 Folwell Hall.

No.	Title	Hour	Day	Bldg.	Instructor
10s	Spherical Trigonometry (See 10w)	VII	TTh	104F	Ar
14f	Solid Geometry (3 cred.; all; prereq. plane geometry and higher algebra)	IV	MWF	104F	Ar
14w	Solid Geometry (See 14f)	VII	MWF	102F	Ar
14s	Solid Geometry (See 14f)	VII	MWF	124F	Ar
15f-16w**	Elementary Mathematical Analysis—A course for premedical and other students who desire a survey of college mathematics including trigonometry, algebra, and calculus with emphasis on fundamental ideas rather than on technical preparation for more advanced courses in mathematics (10 cred.; all; prereq. plane geometry and Course 1 or high school higher algebra§)	III	MTWThF	104F	Ar
15w-16s**	Elementary Mathematical Analysis (See 15f-16w)	I	MTWThF	105F	Ar
20w*	Mathematics of Investment (5 cred.; all; prereq. 8, or 6 and 7, or 15 and 16)	VII	MTWThF	JAud	Ar
20s*	Mathematics of Investment (See 20w)	I	MTWThF	JAud	Ar
21	<i>Introduction to the Mathematics of Life Insurance</i> (3 cred.; all; prereq. 20) (Not offered)				
30f	Analytic Geometry (5 cred.; all; prereq. 6 and 7 or 6 and 8, or 15 and 16)	I	MTWThF	104F	Mr. Brink
30w	Analytic Geometry (See 30f)	II	MTWThF	102F	Ar
30s	Analytic Geometry (See 30f)				
	Sec. 1	II	MTWThF	105F	Ar
	2	III	MTWThF	105F	Ar
G.E.70f,w,s	The Slide Rule (1 cred.; all; prereq. Math. 6 or 8, or 15 and 16) (For the schedule of hours and days see General Engineering 70 in the Bulletin of the Institute of Technology)				

Senior College Courses

Courses 50, 51, 105 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

50f	Calculus I—Differential Calculus (5 cred.; jr., sr.; prereq. 30)	III	MTWThF	101F	Mr. Jackson
50w	Calculus I—Differential Calculus (See 50f)	I	MTWThF	104F	Mr. Brink
50s	Calculus I—Differential Calculus (See 50f)	II	MTWThF	102F	Ar
51w	Calculus II—Integral Calculus (5 cred.; jr., sr.; prereq. 50)	III	MTWThF	101F	Mr. Jackson
51s	Calculus II—Integral Calculus (See 51w)	I	MTWThF	104F	Mr. Brink
60f	Synthetic Metric Geometry (3 cred.; jr., sr.; prereq. 30)	VII	MWF	104F	Miss Gibbens
62w	Introduction to the Theory of Equations (3 cred.; jr., sr.; prereq. 50)	VII	MWF	104F	Miss Carlson
70	<i>History of Elementary Mathematics</i> (3 cred.; jr., sr.; prereq. 30) (Not offered)				
102f-103w	Advanced Analytic Geometry (6 cred.; jr., sr., grad.; prereq. 51)	II	MWF	104F	Mr. Bussey
105f	Intermediate Calculus (5 cred.; jr., sr., grad.; prereq. 51)	II	MTWThF	101F	Mr. Underhill

* Prebusiness students who elect mathematics to meet the requirement of 10 credits in mathematics or laboratory science, should take 1 and 8 if they have not had high school higher algebra, and 8 and 20 if they have had high school higher algebra.

** No student may receive credit for both Course 6-7 and Course 15-16. If a student has taken Course 6 and wants more mathematics he should take Course 7; if he has taken Course 15-16 and wants more mathematics, he should consult the chairman of the department, Room 119 Folwell Hall.

No.	Title	Hour	Day	Bldg.	Instructor
105s	Intermediate Calculus (See 105f)	III	MTWThF	101F	Mr. Jackson
106f	Differential Equations (3 cred.; jr., sr., grad.; prereq. 51)	IV	MWF	105F	Mr. Underhill
107w-108s	Advanced Calculus (6 cred.; jr., sr., grad.; prereq. 105)	IV	MWF	105F	Mr. Underhill
109	<i>Theory of Numbers</i> (3 cred.; jr., sr., grad.; prereq. 51) (<i>Not offered</i>)				
113	<i>Mathematics of Exterior Ballistics</i> (3 cred.; jr., sr., grad.; prereq. 105 or 106 or equiv.) (<i>Not offered</i>)				
115	<i>Differential Geometry</i> (3 cred.; jr., sr., grad.; prereq. 136) (<i>Not offered</i>)				
118-119-120	<i>Vectors and Matrices</i> (9 cred.; jr., sr., grad.; prereq. 51) (<i>Not offered</i>)				
121f-122w-123s	Mathematical Theory of Statistics (9 cred.; jr., sr., grad.; prereq. 51)	VIII	MTF	105F	Mr. Jackson
125	<i>Theory of Geometrical Constructions</i> (3 cred.; jr., sr., grad.; prereq. 30) (<i>Not offered</i>)				
131	<i>Advanced Algebraic Theory</i> (3 cred.; jr., sr., grad.; prereq. 62 or 105) (<i>Not offered</i>)				
136s	Solid Analytic Geometry (3 cred.; jr., sr., grad.; prereq. 50 or registration in 50)	II	MWF	104F	Mr. Bussey
137s	Advanced Theory of Equations (3 cred.; jr., sr., grad.; prereq. 51, 62)	VII	MWF	104F	Miss Carlson
140	<i>Projective Geometry</i> (3 cred.; jr., sr., grad.; prereq. 51 or consent of instructor) (<i>Not offered</i>)				
142	<i>Theory of Invariants</i> (3 cred.; jr., sr., grad.; prereq. 131 or 137) (<i>Not offered</i>)				
144-145-146	<i>Topics in Analysis</i> (9 cred.; jr., sr., grad.; prereq. 51) (<i>Not offered</i>)				
149	<i>Introduction to Group Theory</i> (3 cred.; jr., sr., grad.; prereq. 51, 62) (<i>Not offered</i>)				

For Graduate Students Only

206f-207w-208s	Theory of Functions (9 cred.; grad.; prereq. 108)	II	TThS	104F	Mr. Olmsted
245f-246w-247s	Advanced Theory of Functions (9 cred.; grad.; prereq. 208)	Ar	Ar	Ar	Mr. Hart

NOTE.—Some of the courses listed in the Graduate School Bulletin are open to properly qualified juniors and seniors. For further information consult the chairman of the Department of Mathematics.

MILITARY SCIENCE AND TACTICS

See the program of Military Science and Tactics, page 11.

MUSIC

To secure the degree of bachelor of arts with major in music, a student must fulfill the requirements of both the Junior and Senior Colleges as stated in the Bulletin of the College of Science, Literature, and the Arts, securing 144 credits in courses other than practical music (piano, voice, etc., Courses 11 to 27). During the first two years he will register for English A-B-C or Composition 4-5-6, unless exempt from the requirement in English; foreign language; History 11-12-13; Psychology 1-2 and 4-5; and the following courses in music: 1-2-3, 4-5-6, 7-8, 34-35-36; 37-38-39 for all students who major in organ or piano.

He must earn thirty credits in practical music selected from Courses 11 to 27,* the number of credits in his major instrument to be determined by the department. At the end of the sophomore year a comprehensive examination must be taken to insure that the student is prepared for Senior College work.

Major advisers in the College of Science, Literature, and the Arts.—Professor Ferguson; Associate Professor Hull.

* Students may not take special examinations in practical music (Music 11-27) for work done elsewhere while they are in residence at the University.

Major sequences in the College of Science, Literature, and the Arts.—

- A. Courses 50-51-52, 53-54-55, 56-57-58, 60-61-62 or 63-64-65, 76.
- B. Courses 56-57-58, 60-61-62 or 63-64-65, 73-74-75, 76, 77-78-79.
- C. Courses 56-57-58, 60-61-62 or 63-64-65, 70-71-72, 80-81-82.

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Courses recommended for students who have a minor rather than a major interest in music—**A. Practical Music**

Courses 1, 4-5, 34-35-36, and twelve credits in practical music (Courses 11 to 27) in the Junior College plus ten credits in practical music (Courses 11 to 27) in the Senior College.

B. History and Criticism

Courses 1, 4-5, 34-35-36, 76, and 53-54-55 or 50-51-52 or 56-57-58.

C. Ensemble

Two years' work (12 credits) or equivalent in practical music (Courses 11 to 27), Courses 34-35-36, 76, 60-61-62 or 63-64-65, 40-41-42 or 43-44-45.

For a special curriculum in Music Education see the College of Education Bulletin. For courses in Music Education see the program of the College of Education in this bulletin.

Entrance requirements, according to the instrument selected—

Piano: Any major or minor scale in octaves, thirds, sixths, or tenths, in sixteenth notes at M.M., quarter note = 108; Bach Invention or dance from one of the suites; a sonata by Haydn or Mozart; a modern composition of equal difficulty with the sonata.

Voice: Sing on pitch with correct phrasing and musical intelligence standard songs in good English (the simpler classics recommended). Demonstrate ability to read a simple song at sight and have a knowledge of the rudiments of music. Have a promising voice. Some knowledge of piano is urgently recommended.

Violin: Major and minor scales, arpeggios; the simpler Kreutzer Etudes; a sonata by Handel, Haydn, Mozart, or Schubert; a more modern work displaying special technique peculiar to the violin.

Organ: Same as for piano.

To register in the music course a student must meet the entrance requirements in practical music before a committee of the faculty of the Music Department. This applies also to academic students who wish to elect courses in practical music.

Fees.—

Music 11 to 27 inclusive, Mu.Ed. 225:

- | | |
|--|---------|
| 1. One individual lesson per week, 2 credits..... | \$25.00 |
| 2. Two individual lessons per week, 4 credits..... | 50.00 |
| 3. Class lessons in Courses 11C, 12C, 2 credits..... | 15.00 |

Music A-B-C and D-E-F:

- | | |
|---|-------|
| 1. One individual lesson per week, no credit..... | 25.00 |
|---|-------|

Practical music.—Students may enter courses in practical music (private lessons) any quarter.

Courses numbered from 11 to 27*, inclusive, carry either 2 or 4 credits a quarter.

* Students may not take special examinations in practical music (Music 11 to 27) for work done elsewhere while they are in residence at the University.

The first twelve credits in any one of these courses count as credits in Junior College courses; additional credits count as credits in Senior College courses.

No student may count for graduation more than 36 credits in practical music.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
Mu.Ed.1f	Music Orientation (No cred.; fr. majoring in music; no prereq.)	V	TTh	4Mu	Mr. Ferguson, Mrs. Nohavec, and others
1f	Ear Training (2 cred.; all; there is no prerequisite for this course, but no student should register for it until he has made arrangements for a placement test in the office of the Department of Music)				
	Sec. 1	III	MTWTh	3Mu	Miss Malcolm
	2	VI	MTWTh	3Mu	Miss Kendall
	3	VI	MTWTh	103Mu	Miss Malcolm
	4*	I	MTWTh	3Mu	Miss Malcolm
2w-3s	Ear Training (2 cred.; continuation of 1)				
	Sec. 1	III	MW	3Mu	*Miss Malcolm
	2	VI	MW	3Mu	Miss Kendall
	3	VI	MW	103Mu	Miss Malcolm
1w	Ear Training (See 1f)	II	MTWTh	3Mu	Miss Kendall
2s	Ear Training (See 2w)	II	TTh	3Mu	Miss Kendall
3f	Ear Training (See 3s)	II	TTh	3Mu	Miss Kendall
4w-5s	Harmony (6 cred.; all; prereq. 1)				
	Sec. 1	II	MWF	103Mu	Miss Malcolm
	2	VII	MWF	103Mu	Miss Malcolm
4s	Harmony (See 4w)	I	MWF	3Mu	Miss Malcolm
5f	Harmony (See 5s)	VII	MWF	3Mu	Miss Malcolm
6f	Harmony (continued) (3 cred.; all; prereq. 4-5)	III	MWF	103Mu	Miss Malcolm
7w-8s†	Counterpoint (6 cred.; soph., jr., sr.; prereq. 4-5-6)	III	MWF	103Mu	Mr. Ferguson
20	<i>The Physical Basis of Music</i> (The same as Physics 15)—Consideration of pitch, intensity, and quality of musical tones. Problems of resonance. Influences of amplifying systems on musical sounds. Physiological and psychological factors pertaining to music. Musical scales and their temperament. Study of musical instruments and the voice. Auditorium problems in ensemble playing (3 cred.; all; no prereq.) (<i>Not offered in 1942-43</i>)				
31f-32w-33s‡	Music Appreciation—Cultivation of better understanding of music heard today. The course is designed for students with a general interest in music rather than for those majoring in music (6 cred.; all; no prereq.)	VII	TTh	MuAud	Mr. Killeen and others
34f-35w-36s‡	History of Music (6 cred.; soph., jr., sr.; no prereq.)				
	Lect.	II	MW	MuAud	Mr. Ferguson
	Rec. (optional)	II	F		
37f-38w-39s	Keyboard Harmony (3 cred.; all; prereq. 4-5)	II	TTh	103Mu	Mr. Jennings

Courses in Practical Music§

For a statement about credits and prerequisites for courses in practical music other than Courses 40-41-42 and 43-44-45, see page 70.

The first twelve credits in any one of Courses 11 to 27 count as credits in Junior College courses; additional credits count as credits in Senior College courses.

* Section 4 is for students not majoring or minoring in music.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ May be taken only with the consent of director.

§ Students may enter any quarter.

No.	Title	Hour	Day	Bldg.	Instructor
Af-Bw-Cs†§	Piano (No cred.; for students without entrance requirements in piano; no prereq.)	Ar	Ar	Mu	Ar
Df-Ew-Fs†§	Voice (No cred.; for students without entrance requirements in voice; no prereq.)	Ar	Ar	Mu	Ar
11f,w,s†	Piano—Individual Lessons	Ar	Ar	Mu	Ar
11Cf,w,s†	Piano—Class Lessons*				
	Sec. 1	I	MW	Mu	Ar
	2	II	MW	Mu	Ar
	3	II	TTh	Mu	Ar
	4	III	TTh	Mu	Ar
	5	VI	TTh	Mu	Ar
12f,w,s†	Voice—Individual Lessons	Ar	Ar	Mu	Ar
12Cf,w,s†	Voice—Class Lessons*				
	Sec. 1	VI	MWF	Mu	Ar
	2	VII	MWF	Mu	Ar
13f,w,s†	Violin	Ar	Ar	Mu	Ar
14f,w,s†	Viola	Ar	Ar	Mu	Ar
15f,w,s†	Cello	Ar	Ar	Mu	Ar
16f,w,s†	Double Bass	Ar	Ar	Mu	Ar
17f,w,s†	Flute	Ar	Ar	Mu	Ar
18f,w,s†	Oboe	Ar	Ar	Mu	Ar
19f,w,s†	Clarinet	Ar	Ar	Mu	Ar
20f,w,s†	Bassoon	Ar	Ar	Mu	Ar
21f,w,s†	Trumpet	Ar	Ar	Mu	Ar
22f,w,s†	French Horn	Ar	Ar	Mu	Ar
23f,w,s†	Trombone	Ar	Ar	Mu	Ar
24f,w,s†	Tuba	Ar	Ar	Mu	Ar
25f,w,s†	Percussion	Ar	Ar	Mu	Ar
26f,w,s†	Harp	Ar	Ar	Mu	Ar
27f,w,s†	Organ	Ar	Ar	Mu	Ar
40f-41w-42s†§§	Orchestra (6 cred.; all; prereq. consent of director)	7:30 p.m.	TW	NMA	Ar
43f-44w-45s†**	University Chorus (3 cred.; all; prereq. consent of director)	7:00-9:00 p.m.	T	BuAud	Mr. Killen
	On the Minneapolis campus†				

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

50f-51w-52s	Music of the Eighteenth Century (6 cred.; jr., sr.; prereq. 35)	VIII, IX	T	104Mu	Ar
		IX	Th	104Mu	
53f-54w-55s	Romantic Movement (6 cred.; jr., sr.; prereq. 35)	VII	WF	104Mu	Miss Kendall
56f-57w-58s†	Bach and Beethoven (9 cred.; sr.; prereq. 34-35-36)	VI, VII	TTh	104Mu	Mr. Ferguson
59s	Technique of Voice (2 cred.; jr., sr.; prereq. 4-5 and 6 cred. in Course 12 or 12C)	VI	TTh	4Mu	Mr. Killen
60f-61w-62s	Instrumental Ensemble (6 cred.; jr., sr.)	VI	TTh	103Mu	Ar
		and			
		III	S	103Mu	

* Science, Literature, and the Arts major students must take individual rather than class lessons in their major instrument. Music Education majors will take individual lessons in their major, and class lessons in their minor, instrument. No student may take class lessons for more than 6 credits. Classes in piano will be composed of 4 students; classes in voice may be composed of 6 students.

† To receive credit for any part of this course student must complete parts preceding the dagger.

‡ See statement of fees, page 70.

§ May be taken only with the consent of the director.

¶ Students may enter any quarter.

** Students may receive credit for two years of chorus.

†† A course entitled "University Farm Music Ensembles," which is sponsored by the College of Education and is exclusively for students of the College of Agriculture, Forestry, and Home Economics, is listed under Music Education in another part of this bulletin (page 134).

‡‡ Students majoring in music may earn twelve credits in orchestra.

No.	Title	Hour	Day	Bldg.	Instructor
63f-64w-65s	Vocal Ensemble (6 cred.; jr., sr.; prereq. 6 cred. in Course 12 or 12C)	II	TTh	104Mu	Miss Hull
66f-67w-68s	Advanced Vocal Ensemble (6 cred.; jr., sr.; prereq. consent of instructor)	Ar	Ar	104Mu	Mr. Killeen
70f-71w-72s†	Normal Piano (6 cred.; jr.; prereq. 2 years of piano)	I	MWF	103Mu	Miss Kendall
73f-74w-75s	Advanced Harmony (6 cred.; jr.; prereq. 4-5-6)	IV, V	T	103Mu	Ar
76f	Form and Analysis (3 cred.; jr., sr.; prereq. 4-5 and Psy. 1-2)	II	MWF	103Mu	Mr. Stephens
77f-78w-79s	Composition-Orchestration (6 cred.; jr., sr.; prereq. 4-5-6, 7-8)	Ar	Ar	Ar	Mr. Ferguson
80f-81w-82s†	Advanced Normal Piano (6 cred.; sr.; prereq. 70-71-72)	VIII	MWF	103Mu	Miss Kendall
83f-84w-85s	Advanced Composition (6 cred.; sr.; prereq. 77-78-79)	Ar	Ar	Ar	Mr. Ferguson
90f-91w-92s	Advanced Instrumental Ensemble (6 cred.; sr.; prereq. 60-61-62)	VI	MWF	104Mu	Ar
95f-96w-97s	Piano Seminar (No cred.; open only upon recommendation of the Music Department to a limited number of students regularly enrolled in the University)	VIII	W	104Mu	Mr. Mitropoulos

For Graduate Students Only

200f-201w-202s	Basis of Musical Expression (9 cred.; grad.; prereq. 56-57-58)	VII, VIII	M	104Mu	Mr. Ferguson
	Conference hour	Ar	Ar	Ar	
	Seminar	VIII, IX	F	104Mu	
205f-206w-207s	Composition in Larger Forms (9 cred.; grad.; prereq. 83-84-85)	Ar	Ar	Ar	Mr. Ferguson
209f-210w-211s	Advanced Topics in Musical Analysis (9 cred.; grad.; prereq. 76)	Ar	Ar	Ar	Ar

MUSIC EDUCATION

See Education, page 38.

NATURAL SCIENCE

1f-2w-3s* Orientation in the Natural Sciences—An integrated survey course in which the student is introduced to the subject matter and methods of the physical and biological sciences. The entire course (15 credits), but not a 5- or a 10-credit part of it, fulfills the group "D" requirement in the natural sciences for admission to the Senior College of Science, Literature, and the Arts, the College of Education, or the School of Business Administration. The individual quarters (1f,2w,3s) may be taken as elective courses (15 cred.; fr., soph.; no prereq.)

Lect.	III	Th	150Ph	Mr. Buchta
Sec. 1	I	MTWF	145Ph	Mr. Buchta
2	III	MTWF	14P	Mr. Carlson
3	III	MTWF	9F	Miss Shaw
4	IV	MTWF	210P	Mr. Thiel
5	VII	MTWF	9F	Ar

NAVAL SCIENCE AND TACTICS

See the program of Naval Science and Tactics, page 12.

NORWEGIAN

See Scandinavian, page 99.

* Students may enter any quarter.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

PHILOSOPHY

Major advisers in the College of Science, Literature, and the Arts.—Professors Conger and Feigl; Assistant Professors Castell and Everett.

Major sequence in the College of Science, Literature, and the Arts.—Courses 50-51-52 and others, to make a total of at least 27 credits in Senior College courses. Students who take Courses 50-51-52 and 50A-51A-52A must complete at least six credits in courses numbered above 100; those who take 50-51-52 alone must complete at least twelve credits in courses numbered above 100.

(Prerequisite for major sequence, Course 1.)

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College. In particular, Pol. Sci. 164-165-166 may be offered to make up a major in philosophy if the major adviser approves.

Most of the courses in philosophy are designed to be in one way or another "integrative"—to take data from other courses and from various fields of interest and ask how they fit together and what their significance is for man and his work. For a list of recommended related courses in other departments consult philosophy instructors or see the bulletin board outside 323 Folwell Hall.

Students intending to enter theological seminaries or other institutions for training in religious work should note the special curriculum in liberal arts which is indicated in the Bulletin of the College of Science, Literature, and the Arts (not in this Combined Class Schedule). Philosophy advisers may be consulted with regard to this curriculum.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor	
2f-1w-3s§	General Philosophy (A year sequence equivalent to Logic, Problems of Philosophy, and Ethics, taken in the order named)—A presentation and analysis of intellectual and moral values competing for acceptance in the modern world. Scientific and other ways of knowing; various world-views and philosophies of life; ideals for social action (5 cred. per qtr.; fr., soph.; no prereq.)	II	MTWThF	200Pt	Mr. Everett	
		2	VI	MTWThF	200Pt	Miss Shaw
2f-1w-3s	Logic, Problems of Philosophy, Ethics—A special sequence of courses in philosophy for prelegal freshmen. Only by special permission of the instructor will students be admitted to 1w-3s without 2f, or to 3s without 1w (5 cred. per qtr.; prelegal fr.; no prereq.)	VI	MTWThF	101L	Mr. Castell, Mr. Oliver	
1f	Problems of Philosophy—An introductory course dealing with man's most important attempts to understand the world and himself. Brief survey of the great philosophies; methods of obtaining knowledge; chief data of the sciences; doctrines of evolution, especially in their bearing on ethics and religion (5 cred.; open to some fr.* and to soph., jr., sr.; no prereq.)	III	MTWThF	321F	Mr. Oliver	
1w	Problems of Philosophy (See 1f)	2	VI	MTWThF	322F	Mr. Conger
		Sec. 1	IV	MTWFS	322F	Mr. Conger
1s	Problems of Philosophy (See 1f)	2	VII	MTWThF	322F	Mr. Norborg
			I	MTWThF	322F	Mr. Conger
2f	Logic—A study of the difference between logical and fallacious reasoning; types of fallacies; rules of a good definition; syllogisms; proof; hypothesis; generalization; probability (5 cred.; open to some fr.* and to soph., jr., sr.; no prereq.)	Sec. 1	IV	MTWFS	322F	Mr. Phillips
		2	VII	MTWThF	321F	Mr. Norborg

* Courses 1, 2, and 3 are open in any quarter to a limited number of freshmen with the approval of the Junior College office, 106 Folwell Hall.

§ Students may enter any quarter.

No.	Title	Hour	Day	Bldg.	Instructor
2w	Logic (See 2f)	I	MTWThF	322F	Mr. Oliver
2s	Logic (See 2f)	III	MTWThF	321F	Mr. Feigl
	Sec. 1	VI	MTWThF	322F	Mr. Oliver
	2				
3f	Ethics—Problems of life treated in terms of (1) contemporary social, political, and economic forces, and (2) the character of the individual; psychological and philosophical foundations of morality; the reconstruction of morality (5 cred.; open to some fr.* and to soph., jr., sr.; no prereq.)	I	MTWThF	322F	Mr. Everett
3w	Ethics (See 3f)	III	MTWThF	321F	Mr. Norborg
	Sec. 1	VI	MTWThF	322F	Mr. Everett
	2				
3s	Ethics (See 3f)	VII	MTWThF	322F	Mr. Norborg
10s	Science and Religion (2 cred.; soph., jr., sr.; no prereq.)	III	TTh	311F	Mr. Norborg
20f	Social Philosophy—A study of conflicting social philosophies of today; liberalism vs. authoritarianism; evaluation of various social, political, and economic institutions in terms of ethical ideals; other problems of social morality; social reconstruction; social utopias (3 cred.; soph., jr., sr.; no prereq.)	IV	MWF	200Pt	Mr. Everett
20w	Social Philosophy (See 20f)	IV	MWF	200Pt	Mr. Everett
20s	Social Philosophy (See 20f) (This section is particularly designed for pre-education students, tho not limited to them)	IV	MWF	322F	Mr. Brameld

Senior College Courses

Course 70 is open to prelegal sophomores who have an average grade of at least C in all their work and in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

50f-51w-52s§	General History of Philosophy (9 cred.; jr., sr.; no prereq.)	III	MWF	322F	Mr. Castell
50Af-51Aw-52As§	Readings in Philosophical Classics (6 cred.; jr., sr.; no prereq.)	III	TTh	322F	Mr. Castell
59f	Aesthetics—A study of modern theories of art. Topics include the nature and status of art standards; the relation of art theories to the social background, to current psychological theories, and to art practice (3 cred.; jr., sr.; no prereq.)	II	MWF	322F	Miss Shaw
70s¶	Modern Philosophies of Social Reform—Social philosophy as theory of social criticism. Central position of law and property in a theory of social criticism. Examination of democracy, laissez-faire, revolution, collective responsibility, communism, and fascism as concepts in modern social criticism (3 cred.; prelegal soph., jr., sr.; prereq. 6 cred. in phil. or 10 cred. in soc. sci.)	II	MWF	322F	Mr. Castell
73	<i>Philosophy of Law</i> —A survey of the classical philosophies of law from Plato through the nineteenth century. The nature and method of law, justice, and the judicial process in the light of contemporary thought (3 cred.; soph., jr., sr.; prereq. 6 cred.) (Not offered)	VIII-IX	M	322F	Mr. Feigl
101f-102w-103s	Principles of Philosophy—Topics for the fall quarter include knowledge, meaning, and truth; for the winter quarter, reality, mind, and nature; for the spring quarter, human values and action (2 cred. per qtr.; open only to seniors and graduates who have not had Course 1 or Course 2; no prereq.)	VIII	MWF	321F	Mr. Norborg
106f-107w	Philosophy of Plato (6 cred.; jr., sr., grad.; prereq. 6 cred. including Course 50)	VIII	MWF	321F	Mr. Norborg

* Courses 1, 2, and 3 are open in any quarter to a limited number of freshmen with the approval of the Junior College office, 106 Folwell Hall.

§ Students may enter any quarter.

¶ No student may receive credit for both Philosophy 70 and Political Science 161-162.

No.	Title	Hour	Day	Bldg.	Instructor
110	<i>Rationalism</i> —The philosophies of Descartes, Spinoza, and Leibniz (3 cred.; jr., sr., grad.; prereq. 6 cred.) (<i>Not offered</i>)				
111f	<i>Empiricism</i> —Philosophies of Locke, Berkeley, Hume (3 cred.; jr., sr., grad.; prereq. 6 cred.)	IV	MWF	321F	Mr. Oliver
112w	Kant (3 cred.; jr., sr., grad.; prereq. 6 cred.)	III	MWF	304F	Mr. Oliver
113s	Kierkegaard and Scandinavian Philosophy (3 cred.; jr., sr., grad.; prereq. 6 cred.)	VIII	MWF	321F	Mr. Norborg
114	<i>American Philosophy from Puritanism to Pragmatism</i> —A study of Puritanism, the Revolutionary period, transcendentalism, evolutionism, idealism, and pragmatism (3 cred.; jr., sr., grad.; especially for students of American history and literature) (<i>Not offered</i>)				
115	<i>Contemporary Philosophy</i> —A study of current systematic and critical philosophies, especially realism, pragmatism, and positivism, as represented by their principal exponents (3 cred.; jr., sr., grad.; prereq. 6 cred.) (<i>Not offered</i>)				
116	<i>Philosophy of John Dewey</i> —A survey of the ethical, social, educational, and logical contributions made to modern thought by this distinctively American thinker (3 cred.; jr., sr., grad.; prereq. 6 cred.) (<i>Not offered</i>)				
123s	<i>Comparative Philosophy</i> —A survey of the principal Oriental philosophies, Hindu, Buddhist, Taoist, and Confucian, with special attention to comparisons and contrasts with Western systems (3 cred.; jr., sr., grad.; prereq. 6 cred.)	III	MWF	311F	Mr. Conger
135w	<i>Philosophy in Modern Literature</i> —Philosophical ideas and their expression in recent literature. Lectures on Schopenhauer, Darwin, Marx, Freud, and others. Readings from Samuel Butler, Emile Zola, Thomas Hardy, Anatole France, Bernard Shaw, and Aldous Huxley (3 cred.; jr., sr., grad.; prereq. consent of instructor)	VII	MWF	321F	Mr. Castell
143	<i>Theory of Knowledge</i> —An analysis of the logical structure and the experiential roots of knowledge. The topics include meaning, validity, truth, reason and experience, induction, criteria of objectivity and reality (3 cred.; jr., sr., grad.; prereq. 6 cred.) (<i>Not offered</i>)				
147f	Advanced Logic (3 cred.; jr., sr., grad.; prereq. 6 cred. in phil. including Course 2)	IV	MWF	311½F	Mr. Feigl
153w	<i>Philosophy of Science</i> —The historical development of the logical concepts of science, especially substance, causality, space, time, and magnitude (3 cred.; jr., sr., grad.; prereq. consent of instructor)	IV	MWF	321F	Mr. Feigl
155w	Metaphysics (5 cred.; jr., sr., grad.; prereq. 6 cred.)	VI	MTWThF	304F	Mr. Conger
164s	<i>Ethical Theory</i> —Distinguishing characteristics of a moral judgment; applications of moral judgments to motives, acts, consequences, and persons; moral freedom and responsibility; moral relativity, scepticism, and unity; ethical monism and pluralism; paternalism and individualism in ends and means; theory of knowledge as basis of morality; examination of representative systems (3 cred.; jr., sr., grad.; prereq. 6 cred., including Course 3 or 52)	VI	MWF	304F	Mr. Everett
165	<i>Political and Social Ethics</i> (3 cred.; jr., sr., grad.; prereq. 6 cred.) (<i>Not offered</i>)				
170f	<i>Philosophy of History</i> —A survey of the mythological, religious, naturalistic, totalitarian, and economic interpretations of history, and a critical analysis of the historical categories: time, succession, causality, continuity, freedom, revolution, and progress (3 cred.; jr., sr., grad.; prereq. 6 cred. in phil. or 10 cred. in hist.)	VI	MWF	304F	Mr. Norborg
180f	History of Religions (3 cred.; jr., sr., grad.; prereq. 6 cred.)	II	MWF	304F	Mr. Conger
181w	Psychology of Religion (3 cred.; jr., sr., grad.; prereq. 6 cred.)	II	MWF	321F	Mr. Conger
182s	Philosophy of Religion (3 cred.; jr., sr., grad.; prereq. 6 cred.)	II	MWF	304F	Mr. Conger
191f-192w-193s	Seminar in Philosophy—Topics to be announced (9 cred.; sr., grad.; prereq. 20 cred. in phil. and consent of instructor)	Ar	Ar	Ar	Mr. Feigl, Mr. Conger, Mr. Castell, Mr. Oliver

Courses Primarily for Graduate Students

No.	Title	Hour	Day	Bldg.	Instructor
241-242-243	<i>Seminar: Philosophy of the Physical Sciences (3 cred. per qtr.; no prereq.) (Offered in 1943-44 and alternate years)</i>				
244-245-246	<i>Seminar: Philosophy of Biology and Psychology (3 cred. per qtr.; no prereq.) (Offered in 1943-44 and alternate years)</i>				
247f-248w-249s	Seminar: Logic of the Exact Sciences (3 cred. per qtr.; no prereq.) (Offered in 1942-43 and alternate years)	Ar	Ar	Ar	Mr. Feigl
250f-251w-252s	Seminar: Philosophy of the Cultural Sciences (3 cred. per qtr.; no prereq.) (Offered in 1942-43 and alternate years)	Ar	Ar	Ar	Mr. Feigl

PHYSICAL EDUCATION FOR MEN

See the program of Physical Education for Men, page 14.

PHYSICAL EDUCATION FOR WOMEN

See the program of Physical Education for Women, page 15.

PHYSICS

Major adviser in the College of Science, Literature, and the Arts.—Professor Valasek.

Major sequence in the College of Science, Literature, and the Arts.—Courses 101-103-105, plus 6 additional credits in Senior College courses, and Mathematics 50, 51, and 105.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

The physics included in specialized curriculum leading to the degree "B.S. in physics," offered in the Institute of Technology, will be accepted as a major sequence in this college.

Major adviser in the College of Education.—Professor Buchta.

Requirements for a teacher's certificate.—Course 7-8-9. This is a general course in physics extending through three quarters.

Major recommendation: The above general course and in addition Courses 107-109-111 and nine credits selected from 52, 110-112, 124, 134, 144.

Minor recommendation: The above general course plus six credits selected from Courses 52, 107-109-111, 134, 144.

For a specialized curriculum in natural science see the Bulletin of the College of Education.

Prerequisites for any course in physics may be waived if a petition for registration in the course is granted by the department chairman.

Junior College Courses

1f-2wf-3s Introduction to Physical Science—Lectures and experimental demonstrations of the principles underlying physical phenomena (9 cred.; all; prereq. high school algebra and plane geometry)

III

MWF 166Ph Mr. Buchta

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

No.	Title	Hour	Day	Bldg.	Instructor
1af-2aw†-3as‡	Introduction to Physical Science—with laboratory included. Fulfills the laboratory-science group requirement in Science, Literature, and the Arts (12 cred.; all; prereq. high school algebra and plane geometry)				
	Lect.	III	MWF	166Ph	Mr. Buchta
	Lab. Sec. 1	I, II	Th	Ar	Mr. Miller
	2	VIII, IX	F	Ar	
4f-5w-6s‡	General Physics (primarily for premedical students)—Mechanics and heat (Physics 4); sound and light (Physics 5); electricity (Physics 6). Laboratory work is an integral part of course (15 cred.; all; prereq. Math. 15-16, Elementary Mathematical Analysis; or Math. 6, Trigonometry, and either Math. 7 or 8, which are courses in college algebra. Premedical students should take Math. 15-16)				
	Lect. and quiz	I	MTWThF	133Ph	Mr. Buchta
	Lab. Sec. 1	VI, VII	M		Mr. Miller
	2	VIII, IX	M		and assistants
	3	VIII, IX	T		
	4	VI, VII	Th		
	5	VIII, IX	F		
	6	III, IV	S		
4s‡	General Physics (See 4f-5w-6s) Students who take this course 4s may complete the sequence 4-5-6 in the University's Summer Session.				
	Lect. and quiz	III	MTWThF	133Ph	Mr. Schmitt
	Lab. Sec. 1	VIII, IX	M	Ar	Mr. Miller
	2	VI, VII	Th		and assistants
	3	VIII, IX	F		
	4	I, II	S		
	5	III, IV	S		
7f-8w-9s‡	General Physics (primarily for students majoring in physics, mathematics, or chemistry and for students in the Institute of Technology)—Mechanics and heat (Physics 7); electricity (Physics 8); sound and light (Physics 9). Laboratory work is an integral part of the course (15 cred.; all; prereq. § Math. 15-16 or equivalent or registration in differential calculus)				
	Schedule for 7f				
	Lect. Sec. 1	III	MTWF	150Ph	Mr. Nier
	2	II	MWThF	150Ph	Mr. Williams
	3	VI	MWThF	150Ph	Mr. Hill
	Quiz Sec. 1	IX	Th	150Ph	
	2	IX	M	150Ph	
	3	IX	T or Th	150Ph	
	Lab. Sec. 1	I, II	M	Ar	Mr. Miller
	2	III, IV	M		and assistants
	3	VI, VII	M		
	4	VIII, IX	M		
	5	I, II	T		
	6	III, IV	T		
	7	VI, VII	T		
	8	VIII, IX	T		
	9	I, II	W		
	10	III, IV	W		
	11	VI, VII	W		
	12	VI, VII	Th		
	13	VIII, IX	Th		
	14	I, II	F		
	15	VI, VII	F		
	16	I, II	S		
	17	III, IV	S		

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$2 per quarter is charged for this course.

§ See note about prerequisites near the bottom of page 77.

No.	Title	Hour	Day	Bldg.	Instructor
7f-8w-9s††	General Physics—Continued				
	Schedule for 8w				
	Lect. Sec. 1	III	MWFS	150Ph	Mr. Nier
	2	II	MWThF	150Ph	Mr. Williams
	3	VI	MWThF	150Ph	Mr. Rumbaugh
	Quiz Sec. 1	IX	T	150Ph	
	2	VII	T	166Ph	
		or IX	M	150Ph	
	3	IX	Th	150Ph	
	Lab. Sec. 1	I, II	M	Ar	Mr. Miller
	2	III, IV	M		and assistants
	3	VI, VII	M		
	4	VIII, IX	M		
	5	I, II	T		
	6	III, IV	T		
	7	VI, VII	T		
	8	VIII, IX	T		
	9	I, II	W		
	10	III, IV	W		
	11	VI, VII	W		
	12	VI, VII	Th		
	13	VIII, IX	Th		
	14	I, II	F		
	15	VI, VII	F		
	16	I, II	S		
	17	III, IV	S		
	Schedule for 9s				
	Lect. Sec. 1	III	MTWF	150Ph	Mr. Nier
	2	II	MWThF	150Ph	Mr. Williams
	3	VI	MWThF	150Ph	Mr. Rumbaugh
	Quiz Sec. 1	III	Th	150Ph	
	2	II	S	150Ph	
		or VIII	Th	150Ph	
	3	VI	T	150Ph	
	Lab. Sec. 1	I, II	M	Ar	Mr. Miller
	2	III, IV	M		and assistants
	3	VI, VII	M		
	4	VIII, IX	M		
	5	I, II	T		
	6	III, IV	T		
	7	VI, VII	T		
	8	VIII, IX	T		
	9	I, II	W		
	10	VI, VII	W		
	11	VI, VII	Th		
	12	VIII, IX	Th		
	13	I, II	F		
	14	VI, VII	F		
	15	I, II	S		
	16	III, IV	S		
7w-8s-9f†	General Physics (See 7f-8w-9s)				
	Schedule for 7w				
	Lect.	II	MWThF	166Ph	Mr. Valasek
	Quiz	II	S	150Ph	
	Schedule for 8s				
	Lect.	II	MWThF	166Ph	Mr. Valasek
	Quiz	VIII	T	150Ph	
	Schedule for 9f				
	Lect.	II	MWThF	166Ph	Mr. Valasek
	Quiz	II	S	150Ph	
	Lab. schedule—see page 80.				

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$2 per quarter is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
7w-8s-9f†	General Physics—Continued Lab. schedule for 7w-8s-9f				
	Sec. 1	VI, VII	M	Ar	Mr. Miller
	2	VI, VII	W		and assistants
	3	VI, VII	F		
	4	VIII, IX	Th		
	5	III, IV	S		
15	<i>The Physical Basis of Music</i> (The same as Music 29). (3 cred.; all; no prereq.) (<i>Not offered</i>)				
29f	Introduction to Meteorology—A presentation of the fundamental physical principles underlying meteorological phenomena, accompanied by instrumental observations and weather map study (3 cred.; all; prereq. high school physics or equiv.)	VI	MWF	133Ph	Mr. Miller

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

52‡	<i>Laboratory Arts</i> (3 cred.; jr., sr.; prereq. 15 cred. in physics and approval of dept.) (<i>Not offered</i>)				
100f-102w-104s	Intermediate Physics—Discussion of selected problems in classical physics. Solution of problems (9 cred.; all; prereq. calculus and 15 cred. in physics)	II	MWF	145Ph	Mr. Wall
101f-103w-105s	Theoretical Physics (15 cred.; jr., sr., grad.; prereq. 15 cred. in physics, Math. 106 or registration in 106)	III	MTWThF	145Ph	Miss Phillips
107f-109w-111s	Modern Physics (9 cred.; jr., sr., grad.; prereq. 15 cred. in physics, Math. 50)	Ar	Ar	Ar	Mr. Williams
110w-112s†¶	Modern Experimental Physics (3 or 4 cred. per qtr.; jr., sr., grad.; prereq. 144)	VI-IX	TTh	145Ph	Mr. Williams
113	<i>Intermediate Acoustics</i> (3 cred.; jr., sr., grad.; prereq. Math. 51, 15 cred. in physics) (<i>Not offered</i>)				
114f-116w-118s¶	Elementary Physical Investigation (9 cred.; jr., sr., grad.; prereq. 15 cred. in physics, Math. 51)	Ar	Ar	Ar	Ar
124w‡	Pyrometry (3 cred.; jr., sr., grad.; prereq. 15 cred. in physics)	VII, VIII, IX	MW	245Ph	Mr. Miller
126s‡	Advanced Heat (3 cred.; jr., sr., grad.; prereq. 15 cred. in physics)	VII, VIII, IX	MW	245Ph	Mr. Miller
131f	Geometrical and Physical Optics (3 cred.; jr., sr., grad.; prereq. 15 cred. in physics, Math. 51)	Ar	Ar	Ar	Mr. Valasek
134f,w‡	Experimental Optics (3 or 4 cred.; jr., sr., grad.; prereq. 15 cred. in physics)	VII, VIII, IX	MF	348Ph	Mr. Valasek
136w,s‡	Spectrum Analysis (3 or 4 cred.; jr., sr., grad.; prereq. 15 cred. in physics)	VII, VIII, IX	MF	348Ph	Mr. Valasek
144f‡	Electricity Measurements (3 cred.; jr., sr., grad.; prereq. 15 cred. in physics, Math. 51)	II	Th	133Ph	Mr. Rumbaugh
	Lect.	III	S	133Ph	Mr. Rumbaugh
	Quiz	VI, VII	MF	231Ph	
	Lab. Sec. 1	VIII, IX	M	231Ph	
	2	VI, VII	W		
	3	III, IV	T	231Ph	
	4	VIII, IX	Th	231Ph	
	5	VI, VII	TTh	231Ph	
		VIII, IX	TF	231Ph	
146s‡	Physics of Vacuum Tubes—Thermionics (3 cred.; prereq. 144 and permission of instructor)	Ar	Ar	232Ph	Mr. Rumbaugh

‡ A fee of \$2 per quarter is charged for this course.

¶ Students may enter any quarter.

No.	Title	Hour	Day	Bldg.	Instructor
152s	X Rays (3 cred.; jr., sr., grad.; prereq. 15 cred. in physics)	Ar	Ar	166Ph	Mr. Valasek
154‡	X-Ray Spectroscopy (3 cred.; prereq. Math. 51, and permission of instructor) (<i>Not offered</i>)				
181f-183w-185s	Atomistic and Elementary Quantum Mechanics—Atomic structure, X rays, spectrum analysis and an introduction to wave mechanics (3 cred. per qtr.; sr., grad.; prereq. 101-103-105 or registration in that course)	Ar	Ar	Ar	Mr. Bardeen

GEOPHYSICS

61	<i>Introduction to Geophysical Prospecting</i> —Qualitative discussions of the application of physical measurements to the location of petroleum and mineral deposits together with some discussion of the applications of geophysical methods to problems of near surface geologic structure (3 cred.; jr., sr.; prereq. general course in physics, Math. 12) (<i>Not offered in 1942-43</i>)				
161-162	<i>Principles of Geophysical Prospecting</i> —Quantitative discussions of theory, instruments, field practice, and interpretation of seismic, electric, gravitational, and magnetic geophysical methods (3 cred. per qtr.; jr., sr., grad.; prereq. a general course in physics, Math. 51) (<i>Not offered in 1942-43</i>)				
164-165-166	<i>Special Problems in Geophysics</i> (Cred. ar.; prereq. permission of instructor) (<i>Not offered in 1942-43</i>)				

PHYSIOLOGY

MEDICAL SCHOOL

Major adviser in the College of Science, Literature, and the Arts.—Professor Hemingway.

Major sequences in the College of Science, Literature, and the Arts.—

Sequence A. Physiology. Course 103-104; 15 credits in approved Senior College courses in related fields.

Sequence B. Physiological Chemistry. Course 100-101; 15 credits in approved Senior College courses in related fields of chemistry, physics, or biology.

Sequence C. Biophysics. Courses will be arranged by Professor Stenstrom with interested students, subject to the approval of the assistant dean for the Senior College.

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Junior College Courses

1f*	Elements of Physiological Chemistry (4 cred.; primarily for students of nursing‡; no prereq.)				
	Lect. and quiz	II	ThS	Ar	Dr. Barnum
		III	Th		and others
	Lab. Sec. A,B	VII, VIII	M	310MH	
	C,D,E	I, II	T	310MH	
1s*	Elements of Physiological Chemistry (See 1f)	II	MWF	Ar	Dr. Barnum
	Lect. and quiz	II, III	S	310MH	and others
	Lab.				
2f*	Elements of Physiology (4 cred.; primarily for students of nursing‡; no prereq.)				
	Lect. and quiz	I	ThS	Ar	Dr. Lorber
		VI	F		and others
	Lab. Sec. A,B	III, IV	S	301MH	
	C D	III, IV	T	301MH	
	E	VII, VIII	F	301MH	
2s*	Elements of Physiology (See 2f)				
	Lect. and quiz	I	TThS	Ar	Dr. Lorber
	Lab.	II, III	Th	301MH	and others

* Will not count for credit for admission to the Medical School except by permission of the dean of that school.

‡ A fee of \$2 per quarter is charged for this course.

§ Others may be admitted by special permission.

No.	Title	Hour	Day	Bldg.	Instructor
4f,s*	Human Physiology (4 cred.; all; prereq. 1 qtr. zool., 1 qtr. chem.)	III, IV	MWF	301MH	Dr. Fetcher and others

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

50f	Physiological Chemistry (4 cred.; primarily for phys. ed. students§; jr., sr.; prereq. inorganic chemistry)	VI	MTWThF	Ar	Dr. Samuels, Dr. Barnes
51w*	Human Physiology (6 cred.; primarily for phys. ed. students§; jr., sr.; prereq. Zool. 1-2-3; Inorg. Chem. 1-2-3, or 4-5, or equiv.; Physiol 50; Human Anatomy or Comp. Anatomy)	IV VI, VII, VIII, IX	MWF T	MH MH	Dr. Keys and others
56w	Physiological Chemistry (4 cred.; primarily for dental students§; jr., sr.; prereq. org. chem.)	I	TThS	Ar	Dr. Armstrong and others
	Lect.	I	TThS	Ar	
	Quiz	II	T	Ar	
57s	Physiological Chemistry (5 cred.; jr., sr.; prereq. 56)	I	TThS	Ar	Dr. Armstrong and others
	Lect. and quiz	I	TThS	Ar	
	Lab.	II, III, IV	T		
		II, III	Th		
58w*	Human Physiology (6 cred.; primarily for dental students§; sr.; prereq. zool. and Physiol. 56, 57)	I	TWThS	Ar	Dr. Scott and others
	Lect.	I	TWThS	Ar	
	Quiz	II	S	Ar	
	Lab.	II, III, IV	T	Ar	
59s*	Human Physiology (8 cred.; sr.; prereq. 58 or equiv.)	I	MTThFS	Ar	Dr. Scott and others
	Lect.	I	MTThFS	Ar	
	Quiz	II	T	Ar	
	Lab.	II, III, IV	S	Ar	
60s	Human Physiology (6 cred.; primarily for Medical Technology students)	II	ThS	Ar	Dr. King
	Lect.	II	ThS	Ar	
		and			
	Lab.	IV	MTF		
		VII, VIII, IX	T		
100f	Physiological Chemistry (7 cred.; jr., sr.; prereq. org. chem. and physics)	IV	MTWF		Dr. Burr and others
	Lect.	IV	MTWF		
	Quiz	I	F		
	Lab.				
	Sec. A,B	I, II, III	MW	310MH	Dr. Samuels,
	C,D	I, II, III	ThS	310MH	Dr. Barnes
101w	Physiological Chemistry (6 cred.; jr., sr.; prereq. 100)	IV	TS		Dr. Burr and others
	Lect.	IV	TS		
	Quiz	VI	F		
	Lab.	VI	T		
	Sec. A,B	I, II, III	MW	310MH	
	C,D	I, II, III	ThS	310MH	

* Will not count for credit for admission to the Medical School except by permission of the dean of that school.

§ Others may be admitted by special permission.

No.	Title	Hour	Day	Bldg.	Instructor
103*¶	Physiology of Circulation, Respiration, etc. (9 cred.; jr., sr.; prereq. zool. and org. chem.)				
	Lect.	I	MTWThFS		Dr. Visscher,
	Conference|| or lecture	III	TS		Dr. King
	Lab.				
	Div. A	VI, VII, VIII	MW		
	B	II, III, IV	MW		
104f¶	Physiology of Endocrines, Nervous System, etc. (6 cred.; lect. only, 4 cred.; jr., sr.; prereq. 103 or org. chem. and neurology)				
	Lect.	IV	MTWF	Ar	Dr. Visscher,
	Conference||	IV	S		Dr. Scott,
	Lab.				Dr. Kabat
	Div. A	9:00-11:20	M		
		1:30-4:00	W		
	B	1:30-4:00	M		
		9:00-11:20	W		
114w	Physiology of Muscular Activity (1 or 2 cred.; jr., sr., grad.; prereq. 103 or 51 with grade of A or B)				
	Conference	IX	T	Ar	Dr. Keys
115w	Measurements in Human Physiology (1 cred.; jr., sr., grad.; prereq. 114 which may be taken concurrently) (Limited to 10 students)				
		9:00-11:20	T	Ar	Dr. Keys

For other courses see the bulletin and programs of the Medical School.

POLITICAL SCIENCE

Major advisers.—Professors Anderson, Quigley, Short, and Starr.

Preparation for Senior College work.—Nine credits, including 6 in Course 1-2, and 3 in one of the following: Courses 3, 7, 15, and 25, except as otherwise noted in the prerequisites for particular Senior College courses.

Preparation for a major sequence and for the major in international relations.—Twelve credits, which must include Course 1-2 (6 credits) and at least 3 credits in 7, 15, or 25; plus suitable preparation in History (1-2-3, 4-5-6, or 20-21-22), Economics (6-7 and 5) or Sociology (1 and 45). In addition, students are advised to take one or more of the following: Philosophy 2, Geography 43, Psychology 1-2.

Major sequence.—The preparatory work noted above is designed to provide a general knowledge of (1) the American system of government, and (2) the principal terms and concepts of political science. To this knowledge the major sequence should add the following: (3) a knowledge of the works of a number of great contributors to political ideas; (4) fairly exact and thoro knowledge of some extensive part of three of the following fields of political science: (a) American government, politics, and administration; (b) public law; (c) comparative modern government; (d) political theory; (e) local government and administration; (f) international law, organization, and relations; and (5) development of the ability to study independently in at least one of the three chosen fields.

To these ends the student shall take in each of his selected fields at least one 9-credit course or a three-quarter sequence of related courses totaling 9 credits. Thus the requirement for the major is at least 27 credits in Senior College courses in political science,

* This course 103 will not be offered in the fall quarter of 1942. For information as to when it will next be offered, inquire at the Physiology Department office, 318 Millard Hall.

¶ Students may register for lectures without laboratory.

|| Optional for nonmedical students.

distributed among three selected fields and constituting, along with other parts of the student's program, an integrated and co-ordinated plan of study.

Major in international relations (training for the foreign service).—A special program taking the place of a major sequence will be arranged for students of good standing who desire a general introduction to this field. Courses are drawn from Political Science, Economics, History, Geography, and related departments. Those intending to take the examinations for the American foreign service are advised to follow this program and to prepare themselves adequately in modern foreign languages. Consult Mr. Quigley.

Special readings and honors courses.—Students who are capable of doing better than average work and who wish to specialize or to study for graduation honors are advised to take some of the following courses: 4, 5, 6, 8, 17, 26, and 91-92-93. Course 91-92-93 may be elected for independent work in any of the six fields noted above in the description of the major sequence.

Major adviser in the College of Education.—Professor Kirkpatrick.

Requirements for a teacher's certificate.—Major recommendation: At least 36 credits in political science including 1-2-3, either 7, 15, or 25, and at least 12 credits in Senior College courses.

Minor recommendation: At least 18 credits in political science, including 1-2-3, either 7, 15, or 25, and 3 credits in Senior College courses.

For a comprehensive curriculum in social studies, see College of Education Bulletin.

Note for graduate students.—Courses in political science that are indicated as being open to juniors, seniors, and graduates may be taken by graduate students for full credit, subject to the requirement of additional work over and above that assigned to undergraduates, or they may be taken by graduate students for reduced credit.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
Af-Bw-Cst§	Introduction to Government (for prelegal students only)—A survey of the development of political institutions and ideas, followed by comparative study of the organization and practice of modern governments, with emphasis upon the American system. (9 cred.; no prereq. No student will be given credit for both Courses A-B-C and 1-2-3)				
		VII	MWF	206Pt	Mr. McLaughlin
1f-2w†-3s§	American Government and Politics—Parts 1-2. National, state, and local. Constitutions and fundamental laws; governmental organization; division and separation of powers; legislative, executive, and judicial procedure and problems. Part 3. Principal functions and services of government: defense, law enforcement, regulation of business, public works, and social services (9 cred.; all; no prereq.)				
		I	MWF	206Pt	Mr. Kirkpatrick
		IV	MWF	BuAud	Mr. Christensen
1w-2st§	American Government and Politics (6 cred.; all; no prereq.)				
		III	MWF	206Pt	Mr. McLaughlin
4,5,6	<i>Special Readings in American Government and Politics</i> (2 cred. per qtr.; open to students registered in 2, 3 with grade of B or better in preceding quarter of 1-2-3, and to students who have completed 1-2 with equally satisfactory standing. Consult instructor) (Not offered in 1942-43)				

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ No student will be given credit for both courses A-B-C and 1-2-3.

No.	Title	Hour	Day	Bldg.	Instructor
7w,s	Comparative European Government—The governments of Great Britain, France, Italy, Germany, and Russia. Constitutions; governmental organization; parties and elections (3 cred.; all; prereq. for fr. and soph. Course 1, for jr. and sr. none. Course 7 may be taken simultaneously with Course 2 or 3)				
	Winter	VI	MWF	211Bu	Mr. Starr
	Spring	II	TThS	221Bu	Mr. Starr
8	<i>Special Readings in Comparative European Government</i> (2 cred.; open to students who have had or are registered in 7, with honor point average of 1.5 and grade of C+ in 1-2 or in portion thereof completed, and to advanced students of satisfactory standing. Consult instructor) (<i>Not offered in 1942-43</i>)				
15f,s	Elements of Political Science—The nature and functions of the state; sovereignty and liberty; constitutions, forms of government (3 cred.; all; prereq. for fr. and soph. Course 1, for jr. and sr. none. Course 15 may be taken simultaneously with Course 2 or 3)				
	Fall	II	TThS	221Bu	Mr. Lippincott
	Spring	VI	MWF	211Bu	Mr. Lippincott
17	<i>Special Readings in Elements of Political Science</i> (2 cred.; open to students who have had or are registered in 15, with honor point average of 1.5 and grade of C+ in 1-2 or in portion thereof completed, and to advanced students of satisfactory standing. Consult instructor) (<i>Not offered in 1942-43</i>)				
25f,w	World Politics—Introduction to contemporary international relations; the policies of the great powers; nationalism; imperialism; internationalism (3 cred.; all; prereq. for fr. and soph. Course 1 or Hist. 1-2-3, for jr. and sr. none. Course 25 may be taken simultaneously with Course 2 or 3)				
	Fall	VI	MWF	211Bu	Mr. Mills
	Winter	II	TThS	211Bu	Mr. Mills
26	<i>Special Readings in World Politics</i> (2 cred.; open to students registered in 25, with honor point average of 1.5 and grade of B in 1-2 or in portion thereof completed, and to advanced students of satisfactory standing. Consult instructor) (<i>Not offered in 1942-43</i>)				

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

85s	Problems of World Politics (3 cred.; jr., sr.; prereq. 25 or Hist. 1-2-3)	II	MWF	211Bu	Mr. Mills
91f-92w-93s	Honors Work in Selected Fields (Cred. ar.; jr., sr.; prereq. 18 cred.; consult major advisers)				
		Ar	Ar	Ar	Ar
97	<i>American and European Colonies of Today</i> (3 cred.; jr., sr.; prereq. 9 cred. in pol. sci. or 18 cred. in soc. sci.) (<i>Not offered—offered in 1943-44 and alternate years</i>)				
101f-102w-103s†	Principles of the American Constitution (9 cred.; jr., sr., grad.; prereq. 9 cred.)	VI	MWF	209Bu	Mr. Latham
104-105-106	<i>American Constitutional Development</i> (9 cred.; jr., sr., grad.; prereq. 9 cred. or Hist. 20-21-22) (<i>Not offered in 1942-43</i>)				
108w	Legislative Organization and Procedure (3 cred.; jr., sr., grad.; prereq. 9 cred.)	IV	MWF	209EdH	Mr. Short
109f	The Government in Wartime (3 cred.; jr., sr., grad.; prereq. 9 cred.)	III	MWF	211Bu	Mr. Latham
116f	Local Government: Areas and Organization (3 cred.; jr., sr., grad.; prereq. 9 cred.)	I	MWF	221Bu	Mr. Anderson
117w	Local Government: Politics, Major Functions, Administration, and Central Supervision (3 cred.; jr., sr., grad.; prereq. 116)	I	MWF	221Bu	Mr. Anderson
118s	Local Government: Legal Status, Powers, and Responsibilities (3 cred.; jr., sr., grad.; prereq. 116)	I	MWF	221Bu	Mr. Anderson
120f	Municipal Functions (3 cred.; jr., sr., grad.; prereq. 9 cred.)	II	TThS	209Bu	Mr. Ludwig

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

No.	Title	Hour	Day	Bldg.	Instructor
121w	Municipal Administration (3 cred.; jr., sr., grad.; prereq. 120 or consent of instructor)	II	TThS	209Bu	Mr. Ludwig
122s	Municipal Problems (3 cred.; jr., sr., grad.; prereq. 121 or consent of instructor)	II	TThS	209Bu	Mr. Ludwig
125f	Recent Social Legislation (3 cred.; jr., sr., grad.; prereq. 9 cred.)	II	MWF	211Bu	Mr. Christensen
126w-127s†	Government and the Economic Order (6 cred.; jr., sr., grad.; prereq. 9 cred.)	II	MWF	211Bu(w) 301F(s)	Mr. Christensen Mr. Christensen
131f-132w- 133s†	Public Administration (9 cred.; jr., sr., grad.; prereq. 9 cred.)	II	MWF	221Bu	Mr. Short
137f	American Political Parties (3 cred.; jr., sr., grad.; prereq. 9 cred.)	II	TThS	211Bu	Mr. Starr
138w	American Political Campaigns and Elections (3 cred.; jr., sr., grad.; prereq. 9 cred.)	II	TThS	221Bu	Mr. Starr
141f	European Democracies: Political Institutions (3 cred.; jr., sr., grad.; prereq. 9 cred. or 18 cred. in soc. sci.)	III	TThS	112Bu	Mr. Starr
142w	European Democracies: Political Parties (3 cred.; jr., sr., grad.; prereq. 9 cred. or 18 cred. in soc. sci.)	III	TThS	112Bu	Mr. Starr
148s	European Dictatorships (3 cred.; jr., sr., grad.; prereq. 9 cred. in pol. sci. or 18 cred. in soc. sci.)	III	TThS	112Bu	Mr. Starr
149f-150w†	Government and Politics of the British Empire (6 cred.; jr., sr., grad.; prereq. 9 cred. in pol. sci. or 18 cred. in soc. sci.) (Offered in 1942-43 and alternate years)	III	MWF	209Bu	Mr. Mills
151s	Problems of the British Dominions (3 cred.; jr., sr., grad.; prereq. 149-150 with grade of C+ or better, or consent of instructor) (Offered in 1942-43 and alternate years)	III	MWF	209Bu	Mr. Mills
153f	Far Eastern Governments (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor)	II	MWF	209Bu	Mr. Quigley
160f	American Political Thought (3 cred.; jr., sr., grad.; prereq. 9 cred. in pol. sci. or 18 cred. in soc. sci.)	III	MWF	111Bu	Mr. Kirkpatrick
161w	Problems of Democracy (3 cred.; jr., sr., grad.; prereq. 9 cred. in pol. sci. or 18 cred. in soc. sci.)	III	MWF	111Bu	Mr. Lippincott
162s§	Recent Political Thought (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor)	III	MWF	111Bu	Mr. Kirkpatrick
164f-165w- 166s†	Development of Political Thought (9 cred.; jr., sr., grad.; prereq. 9 cred. in pol. sci. or 18 cred. in soc. sci.)	IV	MWF	211Bu	Mr. Lippincott, Mr. Kirkpatrick
167f-168w- 169s†	Reading in the Classics of Politics (9 cred.; jr., sr., grad.; prereq. 15, or 164-165 with which it may be taken simultaneously, or consent of instructor)	VIII-IX	W	301Lib	Mr. Lippincott, Mr. Kirkpatrick
171s	Political Psychology (The same as Psychology 141) (3 cred.; jr., sr., grad.; prereq. Psy. 140)	III	TThS	206Pt	Mr. Bird
180f-181w- 182s†	International Law (9 cred.; jr., sr., grad.; prereq. 9 cred.)	VI	MWF	221Bu	Mr. McLaughlin

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ No student may receive credit for both Political Science 162 and Philosophy 70.

No.	Title	Hour	Day	Bldg.	Instructor
184f	International Organization (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor)				
		IV	MWF	209Bu	Mr. Quigley
185w	Theories of International Relations (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor)				
		IV	MWF	209Bu	Mr. Quigley
186s	War in International Relations (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor)				
		IV	MWF	209Bu	Mr. Quigley
192w	International Relations in the Far East (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor)				
		II	MWF	209Bu	Mr. Quigley
193s	Problems of the Pacific (3 cred.; jr., sr., grad.; prereq. 9 cred. or consent of instructor)				
		II	MWF	209Bu	Mr. Quigley
195-196	<i>Colonial Government and the Problems of Imperialism</i> (6 cred.; jr., sr., grad.; prereq. 9 cred. in pol. sci. or 18 cred. in soc. sci.) (<i>Not offered—offered in 1943-44 and alternate years</i>)				

Courses Primarily for Graduate Students

The following courses may be taken by seniors majoring in political science with consent of the instructor:

204f-205w- 206s†	Topics in Administrative Law (9 cred.; grad.; prereq. 18 cred. in pol. sci. or consent of instructor)	3:30-5:00	MF	204EdH	Mr. Latham
229f-230w- 231s†	Scope and Methods of Political Science (3 cred.; grad.; prereq. admission to graduate major, or consent of instructor)				
		IV	T	209Bu	Mr. Anderson
232w	Problems of Public Planning (3 cred.; sr. with consent of instructor, grad.; prereq. 15 cred. in pol. sci.)				
		VII	MWF	211Bu	Mr. Anderson
239s	Topics in American Political Parties (3 cred.; sr. with consent of instructor, grad.; prereq. 137 or 138)				
		3:30-5:00	TTh	204EdH	Mr. Starr
242f-243w- 244s†	Topics in Colonization (9 cred.; grad.; prereq. 195-196 or consent of instructor)				
		VII-VIII	M	215Bu	Mr. Mills
280f-281w-282s	Topics in International and Maritime Law (3 cred. each qtr.; sr. with consent of instructor, grad.; prereq. 180-181-182, or consent of instructor)				
		8:00-10:00 p.m.	M	204EdH	Mr. McLaughlin

PREVENTIVE MEDICINE AND PUBLIC HEALTH

MEDICAL SCHOOL

Advisers in the College of Science, Literature, and the Arts.—Professors Anderson and Boynton; and Associate Professor Treloar for Biostatistics.

Major advisers in the College of Education.—Professors Anderson and Boynton; Assistant Professor Freeman.

Major sequence in Biostatistics in the College of Science, Literature, and the Arts.—Courses 110, 111, 120, 121, 130, 131, and 18 credits in Senior College courses approved by the adviser.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Minor sequence in Preventive Medicine and Public Health in the College of Education.—Courses 50 or 51, 57, 59, 102, Bact. 53, and Physiology 2, 4, or 51.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

Major sequence in Public Health Nursing.—P.M.&P.H. 53, 62, 63, 65, 66, 67, 133; additional P.M.&P.H. courses, 8 credits. (Ed.T. 50 and H.E. 76 may be counted as P.M.&P.H. courses to satisfy this requirement of 8 credits.)

Additional requirements.—Social science (other than sociology), 9 credits; Freshman English or exemption from the requirement; Bact. 53 or 101; Psy. 1-2; Soc. 1, 49, 90 or 129, and 3 additional credits in Child Welfare; natural science courses, 14 credits.

Note.—The sequence leads to a B.S. degree with a major in public health nursing, the nine-month certificate course having been discontinued except for students already holding a B.A. or B.S. degree.

For additional details of courses of study in public health nursing consult the Bulletin of the Department of Preventive Medicine and Public Health.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
2s	First Aid (1 cred.; no prereq.)	I, II	Th	01MeH(UF)	Dr. Kernan
3f§	Personal Health (2 cred.; fr., soph.; no prereq.; not open to students who have taken Human Biol. 10C in the General College)	VI	MW	BuAud	Dr. O'Brien
3w§	Personal Health (See 3f)	VI	WF	BuAud	Dr. O'Brien
3s§	Personal Health (See 3f)	VI	MW	BuAud	Dr. O'Brien
4w,s§	Health Problems of Adult Life (2 cred.; all; prereq. 3; not open to students who have taken Human Biol. 10C in the General College)	VI	TTh	*	Dr. Potthoff

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

50f§	Public and Personal Health (3 cred.; open to jrs. and srs. who have not taken Courses 3, 4, 52, or Human Biol. 10C in the General College; no prereq.)	VII	MWF	*	Dr. Boehrer
50s§	Public and Personal Health (See 50f)	IV	MWF	*	Dr. Boehrer
51f§	Community Hygiene (3 cred.; jr., sr.; prereq. 3, or Human Biol. 10C in the General College; not open to students who have taken 4, 50, 52, or 53)	VII	MWF	*	Dr. Cowan
51s§	Community Hygiene (See 51f)	IV	MWF	*	Dr. Cowan
52w,s§	Health Care of the Family (3 cred.; jr., sr.; prereq. Bact. 53, Physiol. 4; not open to students who have taken Course 50, 51, or 53) (Lab. sections limited to 45)	VI	MW	313HE,	Dr. Todd,
	Lect.	VI			01MeH(UF) Miss Palmer
	Lab.				
	Sec. 1	VI-VII		F	
	2	VII-VIII		M	
	3	VII-VIII		W	
53f	Elements of Preventive Medicine and Public Health (For nurses and students in medical social work only) (5 cred.; prereq. 3 or 50, or equiv., and a course in bacteriology)				
	Lect.	II	MWF	*	Dr. Anderson
	Rec. Sec. 1	III	TTh	*	
	2	VI	TTh	*	

* Classroom schedule will be posted on bulletin board outside of Room 121 Millard Hall at the beginning of each quarter.

§ No credit is granted for this course in the major sequence in Public Health Nursing.

No.	Title	Hour	Day	Bldg.	Instructor
55s	Nursing and Social Problems in the Control of Gonorrhoea and Syphilis (2 cred.; prereq. 53 and 62. Soc. 90 or 109 may be substituted by medical social service students. Course 55 may be taken concurrently with any of these prerequisites)	II	TTh *		Miss Freeman
57w‡	Health of Infant and Preschool Child (2 cred.; jr., sr.; prereq. 4, 50, 51, 52, or 53)	II	MF *		Dr. Boynton
58w	Maternal and Child Hygiene (For nurses only) (3 cred.; prereq. 53, 62)	II	MF *		Dr. Boynton
	and 1 hr. ar.				
59s**	Health of the School Child (3 cred.; jr., sr.; prereq. 4, 50, 51, 52 or 53)	II	MWF *		Dr. Ellis
60f,s	Tuberculosis and Its Control (For nurses; others may be admitted by special permission) (2 cred.; prereq. 4, 50, 51, 52, or 53 and 62 which may be taken concurrently)	IV	TS *		Dr. Myers
62f-63w†	Principles of Public Health Nursing (For nurses only) (3 cred. per qtr.; jr., sr.)	Sec. 1¶	IV	MWF *	Miss Pangburn
		2¶	VI	MWF *	Miss Freeman
65,66,67f,w,s††	Field Practice in Public Health Nursing†† (For public health nurses only) (Cred. ar.; jr., sr.; prereq. 53, 62) The credits are to be allowed, according to experience, to these special fields: P.M.&P.H. 65—School Nursing (prereq. 67) P.M.&P.H. 66—County Nursing (prereq. 67) P.M.&P.H. 67—Family Health Agency	Ar	Ar *		Miss Freeman, Miss Draper, Mrs. Lyons
69s**	School Nursing (2 cred.; prereq. 53, 62-63, and some field experience)	I	TTh *		Miss Palmer
70w,s‡	Special Methods and Supervised Teaching in Health Education for Public Health Nurses (The same as Methods and Directed Teaching 50) (6 cred.; jr., sr.; prereq. 65, 66, 133, and permission of instructor) (Enrolment is limited)	Ar	Ar *		Miss Palmer
76f	Nutrition in Public Health Nursing (The same as Home Economics 76) (3 cred.; jr., sr.; prereq. 62 which may be taken concurrently)	III	TThS *		Miss Donelson
81f	Introduction to Health Education (For public health nurses; others may be admitted by special permission) (3 cred.; prereq. 53 which may be taken concurrently)	II	TThS *		Miss Grout
102f	Environmental Sanitation I (3 cred.; sr., grad.; prereq. 50 or 51 or 53 or 100 or permission of instructor. This course may be taken concurrently with any of these prerequisites)	I	MWF *		Mr. Pierce
103f,w,s	Public Health Bacteriology (3 cred., or more by arrangement; jr., sr., grad.; prereq. Bact. 101-102, 116 and permission of instructor)	Ar	Ar *		Dr. Heathman
104f	Epidemiology I (5 cred.; sr., grad.; prereq. 53 or 100 and consent of instructor)	I	TThS *		Dr. Anderson,
		IV	TS		Mr. Treloar
105w	Epidemiology II (3 cred.; sr., grad.; prereq. 104)	III	TThS *		Dr. Anderson
106w	Public Health Administration (3 cred.; physicians, engineers, nurses, social workers, and others by arrangement; prereq. 53, 100, 109 or equiv. Course 106 may be taken concurrently with any of the prerequisites)	I	TThS *		Dr. Anderson

* Classroom schedule will be posted on bulletin board outside of Room 121 Millard Hall at the beginning of each quarter.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per credit is charged for this course.

†† A fee of \$3 per quarter is charged for this course.

§ No credit is granted for this course in the major sequence in Public Health Nursing.

¶ Sec. 1 is for students who have not had practical experience in public health nursing; Sec. 2 is for students who have had such experience.

** A student cannot receive credit for both Course 59 and Course 69.

†† Students must maintain a C average in theory completed before they are admitted to field work.

No.	Title	Hour	Day	Bldg.	Instructor
107f	Child and Adult Hygiene (3 cred.; physicians; graduate students in public health nursing and social work admitted by permission of instructor)	II, III, IV	MF	*	Dr. Boynton
108w	Care of the Handicapped Child (For physicians and nurses) (2 cred.; prereq. 53, 62-63, Psy. 1-2, or permission of instructor)	I	MW	*	Ar
109s	Epidemiology III (3 cred.; sr., grad.; prereq. 104 and 105)	Ar	Ar	*	Dr. Anderson, Mr. Treloar
125w	Community Health Education (3 cred.; prereq. 53, 62, 106 or by permission)	Ar	Ar	*	Miss Grout
133w	Mental Hygiene Aspects of Public Health Nursing (The same as Medicine 133) (3 cred.; jr., sr., grad.; prereq. 62 or experience)	Lect. II	TTh	*	Dr. Clarke
	Rec. Sec. 1	II	S	*	Miss Shalit
	2	III	S	*	Miss Shalit
135s	Conservation of Hearing (For nurses only) (1 cred.; jr., sr., grad.)	I	M	*	Dr. Boies and associates
136s	Sight Conservation (For nurses only) (1 cred.; jr., sr., grad.)	I	W	*	Dr. Burch and associates
137s	Dental Hygiene for Public Health Nurses (For nurses only) (1 cred.; jr., sr., grad.)	I	F	*	Dr. Johnson, Dr. Radusch
170s	Supervision in Public Health Nursing (For public health nurses only) (3 cred.; sr., grad.; prereq. 53, 62-63, 133 and experience in public health nursing)	III	TThS	*	Miss Freeman
171f,w,s	Advanced Problems in Public Health Nursing (For public health nurses only) (Cred. ar.; sr., grad.; prereq. 170, or permission of instructor)	Ar	Ar	*	Miss Freeman and staff
173f,w,s,††	Field Work in Supervision (For public health nurses only) (Cred. ar.; sr., grad.; pre-req. 170 which may be taken concurrently)	Ar	Ar	*	Miss Freeman

For Graduate Students Only

200f,w,s	Research	Ar	Ar	*	Dr. Anderson
210f,w,s	Seminar in Preventive Medicine and Public Health (By permission)	Ar	Ar	*	Dr. Anderson and staff

For courses in public health offered to physicians and engineers, see the Bulletin of the Graduate School, or the Bulletin of the Department of Preventive Medicine and Public Health.

BIostatistics

110f	Biometric Principles (3 cred.; jr., sr., grad.; prereq. 18 cred. in biol. sci. or math. through anal. geom.; to be taken with 111)	III	TThS	*	Mr. Treloar
110s	Biometric Principles (See 110f)	I	TThS	*	Mr. Treloar
111f,s†	Biostatistics Laboratory (2 cred.; to be taken with 110)	Ar	Ar	118MH	Mrs. Behn
120w	Correlation Analysis (3 cred.; sr., grad.; prereq. 110 or consent of instructor; to be taken with 121)	III	TThS	*	Mrs. Behn
121w†	Correlation Laboratory (2 cred.; to be taken with 120)	Ar	Ar	118MH	Mrs. Behn

* Classroom schedule will be posted on bulletin board outside of Room 121 Millard Hall at the beginning of each quarter.

† A fee of \$1 per quarter is charged for this course.

†† A fee of \$3 per quarter is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
130s	Statistical Inference (3 cred.; sr., grad.; prereq. III)	110	or consent of instructor TThS	*	Mr. Treloar
131s†	Sampling Laboratory (2 cred.; to be taken with 130)	Ar	Ar	118MH	Mrs. Behn
140f,w,s‡	Topics in Biometry (Cred. ar.; sr., grad.; prereq. Ar)	120 and 130, or consent of instructor	Ar	118MH	Mr. Treloar
150f,w,s‡	Vital Statistics (3 cred.; prereq. Ar)	permission of instructor	Ar	*	Mr. Treloar

PSYCHOLOGY

Major advisers in the College of Science, Literature, and the Arts.—Professors Bird, Elliott, Paterson, and Tinker.

Major sequences in the College of Science, Literature, and the Arts.—

A. Experimental psychology. Courses 101-102-103; 125-126; and 12 additional credits in Senior College courses.

B. Human and animal behavior. Courses 114; 148; 151-152-153; and 12 additional credits in Senior College courses either in psychology or zoology.

C. Differential psychology. Courses 125-126-127; 160; Educational Psychology 141; and 12 additional credits in Senior College courses.

(Prerequisites: For Sequence A, 1-2 and 4-5. Course 55 is recommended. For Sequence B, 9 credits. For Sequence C, 1-2 and 4-5. Course 3 is recommended. Courses in mathematics are recommended for students majoring in psychology.)

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Honors course.—Students interested in the work of an honors course should consult the chairman of the department.

Junior College Courses

1f-2w†	General Psychology—A general introduction to the study of human behavior with emphasis on the development of the individual (6 cred.; 3rd qtr. fr. with C average. soph., jr., sr.; no prereq.)				
	Sec. 1	I	MWF	BuAud	Mr. Elliott
	2	III	MWF	BuAud	and others
1s,2s	General Psychology (6 cred.; 3rd qtr. fr. with C average. soph., jr., sr.; no prereq.)				
	Sec. 1	II	MTWThFS	JAud	Mr. Bird
	2	IX	MTWThF	301F	
		VIII		Th	
3s	Psychology Applied to Daily Life—A course in the uses of psychological methods in solving such problems as come up in the treatment of ill health, in the courtroom, reformatory, and prison, in business offices and factories, in advertising, in education, in social and political life, in artistic creation and esthetic enjoyment, and in everyday life (3 cred.; soph., jr., sr.; prereq. 1-2)				
		III	MWF	BuAud	Mr. Paterson and others

* Classroom schedule will be posted on bulletin board outside of Room 121 Millard Hall at the beginning of each quarter.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per quarter is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
4f†-5w*††	Introductory Laboratory Psychology—Simple experiments illustrating the subject matter of contemporary psychology. Included are human and animal learning, visual experience, differences in artistic, musical, and other kinds of abilities, measurement of each student's personality traits, and reactions to advertisements. (4 cred.; soph., jr., sr.; may be taken with or after 1-2) (Sections limited to 48)				
	Sec. 1	I, II	MW	211Psy	Mr. Tinker
	2	VIII, IX	MW	211Psy	and others
	3	I, II	TTh	211Psy	
	4	VI, VII	TTh	211Psy	
	5	VIII, IX	TTh	211Psy	
	6	VI, VII	MW	211Psy	
4s†,5s*†	Introductory Laboratory Psychology (See 4f-5w)				
	Sec. 1	I, II	MTThF	211Psy	Mr. Tinker
	2	VI, VII	MTThF	211Psy	and others
	3	VIII, IX	MTThF	211Psy	

Senior College Courses

Courses 52, 55, and 56 are open to third quarter sophomores who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

52s	Genetic Psychology (3 cred.; jr., sr.; prereq. 1-2)	IV	MWF	115Psy	Mr. Heron
55s	Psychology of Sensation (3 cred.; jr., sr.; prereq. 1-2)	IV	MWF	211Psy	Mr. Tinker
56f	Psychology of Advertising—Psychological analysis of the basic principles underlying advertising and selling. Consumer research is stressed. Research techniques for investigating advertising problems and the analysis of consumer wants are considered in detail. (3 cred.; jr., sr.; prereq. 1-2 and Principles of Economics)	II	MWF	2P	Mr. Longstaff
56w	Psychology of Advertising (See 56f)	VII	MWF	150Ph	Mr. Longstaff
65f	Advanced General Psychology—An advanced treatment, with demonstrations, of motivation, emotion, perception, thinking, and learning, developing the relations of psychology to other fields such as the medical and social sciences. (3 cred.; jr., sr.; prereq. 1-2)	II	TThS	115Psy	Mr. Carlson
72	<i>The Psychology of the Fine Arts</i> —An analysis of the production and enjoyment of works of art from the standpoint of psychology, with emphasis on experimental data (3 cred.; jr., sr.; prereq. 1-2) (<i>Not offered</i>)				
74	<i>The Psychology of Literature</i> —The processes involved in the creation and enjoyment of literature. The descriptive and emotive uses of language, the bases of style, metaphor, word-play, the rôle of unconscious language processes, modern trends toward psychological subject matter (3 cred.; jr., sr.; prereq. 1-2) (<i>Not offered</i>)				
84f	Psychology of Learning (3 cred.; jr., sr.; prereq. 1-2)	III	TThS	109Psy	Mr. Heron
86s	Biographical Psychology—Human personalities in relation to their ancestors, their bodies, and their environments, physical and social (3 cred.; jr., sr.; prereq. 9 cred. in psy.)	II	TThS	115Psy	Mr. Elliott

* Students completing projects with distinction may be recommended to receive either one or two additional credits.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per quarter is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
90f,91w,92s	Readings in Psychology—Tutorially directed reading and preparation of reports on special topics, usually supplementing a course already completed (Cred. ar.; jr., sr.; prereq. 1-2; 4-5 or Zool. 1-2-3; and written permission of instructor)	Ar	Ar	Ar	Mr. Elliott, Mr. Bird, Mr. Paterson, Mr. Heron, Mr. Longstaff, Mr. Skinner, Mr. Tinker
101f-102w†-103s	Experimental Psychology (3 cred. per qtr.; cred. ar. for honors students; jr., sr., grad.; prereq. 1-2; and 4-5 or equiv. in another science)	VII VIII	MWF WF	116Psy	Mr. Tinker
108f	Systems of Psychology—A reading course (3 cred.; jr., sr., grad.; prereq. 1-2 and consent of instructor)	Ar	Ar	Ar	Mr. Elliott
114w	Human Behavior (3 cred.; sr., grad.; prereq. 1-2; 4-5 or Zool. 1-2-3, or Phil. 1)	II	TThS	115Psy	Mr. Elliott
118	<i>Psychology of Language</i> —The nature and forms of verbal behavior; motivational and emotional influences in the emission of speech; the problem of reference or meaning; internal language processes; etc. Emphasis upon experimental data and analyses of written materials (3 cred.; jr., sr., grad.; prereq. 9 cred. in psy. or 6 cred. and permission of instructor) (<i>Not offered</i>)				
120	<i>Psychology of Thought</i> —A psychological, as opposed to a logical, treatment of the processes involved in thinking. Experimental investigations of verbal and nonverbal thinking are surveyed, and the resulting principles are applied to everyday life (3 cred.; jr., sr., grad.; prereq. 9 cred. in psy. or 6 cred. in psy. and a course in philosophy) (<i>Not offered</i>)				
125f-126w†	Psychology of Individual Differences (6 cred.; cred. ar. for honors students; sr., grad.; prereq. 1-2; 4-5 or 5 cred. in statistics)	II	MWF	115Psy	Mr. Paterson
127s	Projects in the Psychology of Individual Differences (3 cred.; sr., grad.; primarily for majors in Sequence C; prereq. 125-126)	Ar	Ar	Ar	Mr. Paterson
130s†	Vocational Psychology (3 cred.; jr., sr., grad.; prereq. 9 cred. in psy.)	IV	TS	115Psy	Mr. Paterson
	Lect.	VI-VII	W	211Psy	
	Lab. Sec. 1	VIII-IX	W	211Psy	
	2				
140w	Social Psychology (3 cred.; jr., sr., grad.; prereq. 9 cred. in psy.; or 6 cred. in psy. and either Zool. 1-2-3 or 12 cred. in soc. sci.)	III	TThS	206Pt	Mr. Bird
141s	Political Psychology (The same as Political Science 171) (3 cred.; jr., sr., grad.; prereq. same as 140)	III	TThS	206Pt	Mr. Bird
144f-145w†	Abnormal Psychology (6 cred.; jr., sr., grad.; prereq. 9 cred. in psy.; or 6 cred. in psy. and either Zool. 1-2-3 or 12 cred. in soc. sci.)	IV	MWF	206Pt	Mr. Bird
148w	Physiological Psychology—The topics treated and illustrated by demonstrations will include the elements of neural anatomy and physiology, tonus, neuromuscular set, integration, and the neural basis of learning. The treatment of these topics will stress their importance for psychology (3 cred.; sr., grad.; prereq. 1-2; 4-5 or Zool. 1-2-3, or consent of instructor)	III	MWF	115Psy	Mr. Hathaway
151f	Animal Psychology—The history of the subject and its philosophical and biological foundations; consciousness and its criteria; sensory processes (3 cred.; sr., grad.; prereq. 1-2; 4-5 or equiv. in another science)	VI	MWF	109Psy	Mr. Heron

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
152w	Animal Psychology—Emphasis upon the motivation of behavior; learning; conditioning; insight; reasoning; thinking; judgment; social influences (3 cred.; sr., grad.; prereq. 1-2; 4-5 or equiv. in another science)	VI	MWF	109Psy	Mr. Heron
153s	Individual Investigations in Animal Psychology (3 cred.; sr., grad.; prereq. 151 or 152)	Ar	Ar	Ar	Mr. Heron
160f	Psychology in Personnel Work (3 cred.; sr., grad.; prereq. 1-2, and Principles of Economics or 9 cred. in political science)	III	MWF	2P	Mr. Longstaff
171w-172s†	Introduction to Clinical Psychology—A survey of the methods of clinical psychology in relation to mental deficiency, special abilities and disabilities, behavior problems, personality disorders, and psychosomatic disturbances in adults and children (6 cred.; sr., grad.; prereq. 12 cred. in psy. or child welfare, or ed. psy., and permission of instructor)	VI VIII	MW F	115Psy	Mr. Hathaway, Mr. Crook, Mr. Harris

ROMANCE LANGUAGES

Major advisers in the College of Science, Literature, and the Arts.—Associate Professor Grismer; Assistant Professors Cleton, Brackney.

Major sequences in the College of Science, Literature, and the Arts.—

FRENCH

Courses 70-71-72 or 73-74; 53-54, if the student has not taken French 20; a minimum of 18 additional credits chosen from courses numbered 50 or above, of which at least 9 must be in literary courses.

ITALIAN

Twenty-four credits in courses numbered 50 or above, and 3 additional credits chosen from the following: English 140, 146-147, 148-149; French 121-122-123, 153; Italian 159-160, 161-162; Latin 121; History 153-154-155.

SPANISH

Courses 68-69; 53-54, if the student has not taken Spanish 20; 55; a minimum of 15 additional credits chosen from courses numbered 50 or above. Students planning to do graduate work in Spanish must include in this program 9 credits in literary courses numbered above 100.

A COURSE IN LATIN-AMERICAN STUDIES

See the Bulletin of the College of Science, Literature, and the Arts.

MIXED (FRENCH, ITALIAN, AND SPANISH)

Five credits in conversation and composition.

One literary course above 50, and in addition enough credits chosen from courses in any of the three languages numbered 50 or above to make a minimum of 27 credits in all.

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major advisers in the College of Education.—French: Assistant Professor Cleton; Spanish: Associate Professor Pattison.

Requirements for a teacher's certificate.—Major recommendation in French: 35 credits in courses numbered above 4, these courses to include Survey of French Literature and one other literary course; 50; 53, 54 (or 20); 63; and 103-104-105.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

Major recommendation in Spanish: 35 credits in courses numbered above 4, these courses to include 68-69 or 74-75-76; 50; 53, 54 (or 20); 60; and 70-71.

Minor recommendation: 17 credits in one language in courses numbered above 4 including Survey of French Literature, Survey of Spanish Literature, or Survey of South American Literature.

Admission to advanced courses.—No student will be allowed to elect courses more advanced than intermediate French or Spanish unless he has received an average grade of C in the intermediate courses.

FRENCH

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w	Beginning French (10 cred.; all; no prereq.)	I	MTWThF	227F	Ar
		VI	MTWThF	226F	Ar
1w-2s	Beginning French (See 1f-2w)	III	MTWThF	15F	Ar
1s	Beginning French (1st qtr. of 1-2. See 1f-2w)	III	MTWThF	114F	Ar
2f		Beginning French (2nd qtr. of 1-2. See 1f-2w)	III	MTWThF	202F	Ar
3f-4w	Intermediate French (10 cred.; all; prereq. 1-2, or two years of high school French. Students who have had three years of high school French will omit Course 3 and take Course 4)	I	MTWThF	201F	Ar
		III	MTWThF	226F	Ar
		VII	MTWThF	202F	Ar
		III	MTWThF	202F	Ar
3w-4s	Intermediate French (See 3f-4w)	III	MTWThF	202F	Ar
3s	Intermediate French (1st qtr. of 3-4. See 3f-4w)	I	MTWThF	227F	Ar
		VI	MTWThF	226F	Ar
4f	Intermediate French (2nd qtr. of 3-4; prereq. 3, or three years of high school French)	II	MTWThF	6F	Ar
		VI	MTWThF	101F	Ar
		III	MTWThF	205F	Ar
20f	Oral and Written French (5 cred.; all; prerq. 4, or four½ years of high school French)	III	MTWThF	205F	Ar
20s	Oral and Written French (See 20f)	III	MTWThF	226F	Ar

Senior College Courses

Senior College courses with numbers less than 100 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

50f,w	French Pronunciation (3 cred.; jr., sr.; prereq. 3-4)	II	TThS	203F	Miss Guinotte
52s	French Pronunciation and Diction (Open only to candidates for the French play) (1 or 2 cred.; jr., sr.; prereq. 3-4)	Ar	Ar	Ar	Ar
		VI	MWF	205F	Mr. Fermaud
53f	French Composition (3 cred.; jr., sr.; prereq. 3-4)	VI	MWF	205F	Mr. Fermaud
54w-55s	French Conversation (6 cred.; jr., sr.; prereq. 53 or 20)	IV	MWF	201F	Ar
		VI	MWF	109F	Mr. Fermaud
		62	<i>Advanced Pronunciation and Diction</i> (3 cred.; jr., sr.; prereq. 50) (<i>Not offered</i>)		

¶ Students who have had three years of high school French may be admitted to Course 20 with the consent of the department.

No.	Title	Hour	Day	Bldg.	Instructor
63f-64w	Advanced French Composition (6 cred.; jr., sr.; prereq. 53 or 20 with a grade of B)	II	MWF	203F	Miss Guinotte
65s	Advanced French Conversation (3 cred.; jr., sr.; prereq. 54-55 or 20 with a grade of B)	II	MWF	203F	Miss Guinotte
70f-71w-72s	Survey of French Literature (9 cred.; jr., sr.; prereq. 3-4)	III	MWF	201F	Mr. Clefthon
73w-74s	Survey of French Literature (10 cred.; jr., sr.; prereq. 3-4)	III	MTWThF	227F	Mr. Brackney
80f	French Literature: 19th Century—Chateaubriand and Romantic Prose (3 cred.; jr., sr.; prereq.*)	II	MWF	201F	Mr. Clefthon
81w	French Literature: 19th Century—Drama (3 cred.; jr., sr.; prereq.*)	II	MWF	201F	Mr. Barton
82s	French Literature: 19th Century—Poetry (3 cred.; jr., sr.; prereq.*)	II	MWF	201F	Mr. Clefthon
103f-104w- 105s†	French Syntax and Composition (3 cred.; jr., sr., grad.; prereq. 63 or registration in 63)	VI	T	203F	Mr. Barton
115f	French Literature: 17th Century—Formation of Classic Ideal (4 cred.; jr., sr., grad.; prereq.*)	IV	MTWF	203F	Mr. Fermaud
116w	French Literature: 17th Century—Molière, Racine, La Fontaine (4 cred.; jr., sr., grad.; prereq.*)	IV	MTWF	203F	Mr. Fermaud
117s	French Literature: 17th Century—Moral and Didactic Literature (4 cred.; jr., sr., grad.; prereq.*)	IV	MTWF	203F	Mr. Fermaud
118f-119w-120s	French Literature: 18th Century (9 cred.; jr., sr., grad.; prereq.*)	II	TThS	108F	Mr. Sirich
121-122-123	<i>French Literature: 16th Century</i> (9 cred.; jr., sr., grad.; prereq. 9 cred. in literature courses above 74) (<i>Not offered</i>)				
130	<i>French Romantic Poetry—Victor Hugo</i> (3 cred.; jr., sr., grad.; prereq.*) (<i>Not offered</i>)				
131f	Parnassian Poetry (3 cred.; jr., sr., grad.; prereq.*)	IV	MWF	227F	Mr. Clefthon
132	<i>Verlaine, Rimbaud, and the Symbolists</i> (3 cred.; jr., sr., grad.; prereq.*) (<i>Not offered</i>)				
146-147	<i>Contemporary French Dramatic Literature</i> (4 cred.; jr., sr., grad.; prereq.*) (<i>Not offered</i>)				
156s	French Realistic Novel (3 cred.; jr., sr., grad.; prereq.*)	VII	MWF	201F	Mr. Barton
157	<i>French Novel, 1880-1915</i> (3 cred.; jr., sr., grad.; prereq.*) (<i>Not offered</i>)				
158	<i>Contemporary French Novel</i> (3 cred.; jr., sr., grad.; prereq.*) (<i>Not offered</i>)				
171f-172w- 173s†	History of French Language (3 cred.; jr., sr., grad.; prereq. one year of Latin or permission of instructor)	VIII	Th	203F	Mr. Brackney

Seminars

201f-202w-203s	Old French Phonology and Morphology (6 cred.)	Ar	Ar	203F	Mr. Brackney
204f-205w-206s	Reading in Old French Literature (6 cred.)	Ar	Ar	203F	Mr. Brackney
207f-208w-209s	Old Provençal (6 cred.)	Ar	Ar	203F	Mr. Brackney
225f-226w-227s	French Seminar: Modern Period (6 cred.)		W	203F	Ar
			4:00 to 6:00		

* Prerequisite is 70-71-72 or 73-74.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

ITALIAN

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w†‡	Beginning Italian (10 cred.; all; no prereq.)	III	MTWThF	302F	Miss Nissen
3s	Intermediate Italian (5 cred.; all; prereq. 1-2)	III	MTWThF	302F	Miss Nissen
4	<i>Intermediate Italian</i> (5 cred.; all; prereq. 1-2) (<i>Not offered</i>)				
5w‡	Reading Knowledge of Italian (5 cred.; all; prereq. knowledge of French, Latin, or Spanish. No previous knowledge of Italian is necessary)	VI	MTWThF	302F	Miss Nissen

Senior College Courses

Senior College courses with numbers less than 100 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

69f	Survey of Italian Literature I (3 cred.; jr., sr.; prereq.§)	IV	MWF	302F	Miss Nissen
70w	Survey of Italian Literature II (3 cred.; jr., sr.; prereq.§)	IV	MWF	302F	Miss Nissen
71	<i>Modern Poetry</i> (Leopardi, Carducci) (3 cred.; jr., sr.; prereq.§) (<i>Not offered</i>)				
72	<i>Modern Drama</i> (Giacosa, Bracco, Pirandello) (3 cred.; jr., sr.; prereq.§) (<i>Not offered</i>)				
73s	Boccaccio (3 cred.; jr., sr.; prereq.§)	IV	MWF	302F	Miss Nissen
74	<i>Petrarch</i> (3 cred.; jr., sr.; prereq.§) (<i>Not offered</i>)				
159-160	<i>Dante</i> (6 cred.; jr., sr., grad.; prereq. one course above 50) (<i>Not offered</i>)				
161f-162w	The Sixteenth Century (6 cred.; jr., sr., grad.; prereq. one course above 50)	II	MWF	302F	Miss Nissen

Courses for Which No Knowledge of Italian Is Required

164s	Dante (in English) (3 cred.; jr., sr., grad.; prereq. French 70-71-72 or 73-74, or 6 cred. in English above 50, or Hist. 53-54, or Spanish 65-66-67 or 68-69)	II	MWF	302F	Miss Nissen
------	---	----	-----	------	-------------

SPANISH

Junior College Courses

1f-2w	Beginning Spanish (10 cred.; all; no prereq.)	I	MTWThF	226F	Ar
		IV	MTWFS	226F	Ar
		VI	MTWThF	227F	Ar
		VII	MTWThF	113F	Ar
1w-2s	Beginning Spanish (See 1f-2w)	III	MTWThF	109F	Ar
		VII	MTWThF	109F	Ar
1s	Beginning Spanish (1st qtr. of 1-2. See 1f-2w)	II	MTWThF	226F	Ar
		III	MTWThF	113F	Ar
2f	Beginning Spanish (2nd qtr. of 1-2. See 1f-2w)	III	MTWThF	108F	Ar

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ Credit will not be given for both Course 1 and Course 5.

§ The prerequisite is Course 3 or Course 4; but for students beginning Italian in the Senior College it may be Course 1-2 or 5 with permission of the instructor.

No.	Title	Hour	Day	Bldg.	Instructor
3f-4w	Intermediate Spanish (10 cred.; all; prereq. 1-2 or two years of high school Spanish. Students who have had three years of high school Spanish will omit Course 3 and take Course 4)	II VI	MTWThF	226F	Ar
3w-4s	Intermediate Spanish (See 3f-4w)	III	MTWThF	113F	Ar
3s	Intermediate Spanish (1st qtr. of 3-4. See 3f-4w)	I IV VI VII	MTWThF	226F 226F 227F 113F	Ar Ar Ar Ar
4f	Intermediate Spanish (2nd qtr. of 3-4; prereq. 3, or three years of high school Spanish)	II VI	MTWThF	202F 201F	Ar Ar
20w	Oral and Written Spanish (5 cred.; all; prereq. 4 or four½ years of high school Spanish)	III	MTWThF	205F	Mr. Cuneo
20s	Oral and Written Spanish (See 20f)	III	MTWThF	205F	Mr. Cuneo
30s	Spanish Commercial Correspondence (3 cred.; all; prereq. 4)	VII	MWF	205F	Mr. Cuneo

Senior College Courses

Senior College courses with numbers less than 100 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

50w	Spanish Pronunciation (3 cred.; jr., sr.; prereq. 4)	II	TThS	113F	Mr. LeFort
51	<i>Advanced Spanish Pronunciation and Diction</i> (3 cred.; jr., sr.; prereq. 50) (<i>Not offered</i>)				
52w	Spanish Pronunciation and Diction (Must be elected by candidates for the Spanish play; open to others with permission of instructor) (2 cred.; jr., sr.; prereq. 3-4)	VII	MWF	201F	Mr. Pattison
53f	Spanish Composition (3 cred.; jr., sr.; prereq. 3-4)	II	TThS	201F	Mr. Cuneo
54w-55s	Spanish Conversation (6 cred.; jr., sr.; prereq. 53 or 20)	II	TThS	201F	Mr. Cuneo
60f	Advanced Spanish Composition (3 cred.; jr., sr.; prereq. 53 or 20 with grade of B)	IV	MWF	108F	Mr. LeFort
61w-62s	Advanced Spanish Conversation (6 cred.; jr., sr.; prereq. 54-55 or 20 with grade of B)	IV	MWF	108F	Mr. Cuneo
68w-69s	Survey of Spanish Literature (10 cred.; jr., sr.; prereq. 3-4)	VI	MTWThF	201F	Mr. Pattison
70w-71s†	Latin-American Culture (6 cred.; jr., sr.; prereq. 4 with grade of B or permission of instructor)	III	MWF	203F	Mr. LeFort
74f-75w-76s†	Survey of Spanish American Literature: Contemporary Prose and Poetry (9 cred.; jr., sr.; prereq. 3-4)	II	MWF	108F	Mr. LeFort
110f-111w-112s	Spanish Literature: 19th Century (9 cred.; jr., sr., grad.; prereq.*)	IV	MWF	316F	Mr. Pattison
115f-116w-117s	Spanish Literature: 17th Century (9 cred.; jr., sr., grad.; prereq.*)	II	MWF	205F	Mr. Grismer
120	<i>The Ballad</i> (3 cred.; jr., sr., grad.; prereq.*) (<i>Not offered</i>)				
130s	Cervantes: <i>Don Quijote</i> (3 cred.; jr., sr., grad.; prereq.*)	VII	MWF	303F	Mr. Grismer
131w	The Picaresque Novel (3 cred.; jr., sr., grad.; prereq.*)	VII	MWF	303F	Mr. Grismer

* The prerequisite is 68-69.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ Students who have had three years high school Spanish may be admitted to Course 20 with the consent of the department.

No.	Title	Hour	Day	Bldg.	Instructor
140f-141w-142s	Contemporary Latin-American Literature (9 cred.; jr., sr., grad.; prereq. 68-69 or 74-75-76)	III	TThS	201F	Mr. LeFort
155-156-157	<i>Spanish Literature: 16th Century</i> (9 cred.; jr., sr., grad.; prereq.*) (<i>Not offered</i>)				
174-175-176	<i>Contemporary Spanish Literature</i> (9 cred.; jr., sr., grad.; prereq.*) (<i>Not offered</i>)				

Seminars

241-242-243	<i>Old Spanish Philology</i> (6 cred.) (<i>Not offered</i>)				
244f-245w-246s	Readings in Old Spanish Literature (6 cred.)	Ar	Ar	Ar	Mr. Grismer
250f-251w-252s	Spanish Seminar (6 cred.)	Ar	Ar	Ar	Mr. Pattison

RUSSIAN

1f-2w	Beginning Russian (10 cred.; all; no prereq.)	VI	MTWThF	212F	Mr. Reichardt
3s	Intermediate Russian (5 cred.; all; prereq. 1-2)	VI	MTWThF	212F	Mr. Reichardt

SCANDINAVIAN

Junior College Courses

1f-2w	Beginning Norwegian (10 cred.; all; no prereq.)	I	MTWThF	12F	Ar
3s	Intermediate Norwegian (5 cred.; all; prereq. 1-2 or equiv.)	I	MTWThF	12F	Ar
4f-5w-6s	Advanced Norwegian (9 cred.; all; prereq. 1-2-3 or equiv.)	IV	MWF	12F	Ar
7f-8w	Beginning Swedish (10 cred.; all; no prereq.)	II	MTWThF	12F	Mr. Gustafson
9s	Intermediate Swedish (5 cred.; all; prereq. 7-8 or equiv.)	II	MTWThF	12F	Mr. Gustafson
10f-11w-12s	Advanced Swedish (9 cred.; all; prereq. 7-8-9 or equiv.)	III	MWF	12F	Mr. Gustafson
22w§	Scandinavian Life Today and Yesterday (3 cred.; all; no prereq.)	VI	MWF	12F	Mr. Gustafson

Senior College Courses

Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

51f§	Scandinavian Literature in the 19th Century (2 cred.; jr., sr.; prereq. 4-5-6 or 10-11-12 or 8 cred. in literature)	VI	TTh	12F	Mr. Gustafson
52§	<i>Characteristic Trends in Contemporary Scandinavian Literature</i> (2 cred.; jr., sr.; prereq. 4-5-6 or 10-11-12 or 8 cred. in literature) (<i>Not offered</i>)				
161§	<i>The Modern Scandinavian Novel</i> (2 cred.; jr., sr., grad.; prereq. 4-5-6 or 10-11-12 or 8 cred. in literature) (<i>Not offered</i>)				
171s§	The Modern Scandinavian Drama (2 cred.; jr., sr., grad.; prereq. 4-5-6 or 10-11-12 or 8 cred. in literature)	VI	TTh	12F	Mr. Gustafson
180§	<i>Old Norse Literature</i> (The same as German 196a) (4 cred.; sr., grad.; prereq. 8 cred. in literature) (<i>Not offered</i>)				
182s	Germanic Mythology (The same as German 119) (3 cred.; sr., grad.)	Ar	Ar	Ar	Mr. Reichardt
183§	<i>Germanic Heroic Poetry</i> (The same as German 118) (3 cred.; sr., grad.; prereq. 8 cred. in literature) (<i>Not offered</i>)				

* The prerequisite is 68-69.

§ No knowledge of Scandinavian languages is required.

No.	Title	Hour	Day	Bldg.	Instructor
185	<i>History of the Scandinavian Languages</i> (3 cred.; sr., grad.; prereq. 4-5-6 or 10-11-12 or at least one Germanic language) (<i>Not offered</i>)				
192f	Gothic—Introduction to Germanic Linguistics (The same as German 192) (4 cred.; sr. with completed major sequence, grad.)				
		Ar	Ar	Ar	Mr. Reichardt
195w	Introduction to Old Norse Language and Literature (The same as German 195) (4 cred.; sr., grad.; prereq. 192 or permission of instructor)				
		Ar	Ar	Ar	Mr. Reichardt
196s	Eddic Poetry (The same as German 196s) (3 cred.; sr., grad.; prereq. 195)				
		Ar	Ar	Ar	Mr. Reichardt

For Graduate Students Only

215-216-217	<i>Studies in Scandinavian Romanticism</i> (<i>Not offered</i>)				
218f-219w-220s	Studies in Late Nineteenth-Century Scandinavian Literature				Mr. Gustafson
221f-222w-223s	Biographical Problems in Strindberg				Mr. Gustafson
230-231-232	<i>Seminar: Runic Inscriptions</i> (The same as German 218-219-220) (<i>Not offered</i>)				

SOCIOLOGY AND SOCIAL WORK

Major advisers in the College of Science, Literature, and the Arts.—Professors Chapin, Kirkpatrick, Nelson, and Vold; Associate Professors Fenlason, Monachesi, Shea, Sletto, and Vaile; Assistant Professor Doyle; Lecturer Phillips.

Major sequences in the College of Science, Literature, and the Arts.—

Sequence A. General sociology. Course 53; two of 100, 101, 103; two of 115, 116, 119, 160; 123 or 161; 120, 140, 145; 110 or 112 or 114; 102 or 105 or 132.

Sequence B. Applied sociology. Courses 53, 60, 90; two of 100, 101, 102, 103; two of 115, 116, 119, 160; 120 or 123 or 161; 110 or 112 or 114; 105 or 106 or 107 or 132.

Sequence C. Rural sociology. Courses as follows: two of 53, 60, 90; two of 100, 101, 103; two of 115, 116, 119, 160; 123 or 161; 120 or 140 or 145; 110, 112, 114.

(Prerequisites: For Sequences A, B, C, Soc. 1 and a total of 20 credits from courses in sociology, anthropology, education, history, philosophy, political science, psychology, and zoology).

Sequence D. An interdepartmental sequence recommended as preparation for graduate study in the School of Social Work. It may be taken as a substitute for the major and minor sequences required for the B.A. degree. Courses 53, 60, 90, 101, 114; three of Courses 100, 102, 103, 110, 115, 119, 120, 123, 146, 160; Economics 82, 83, 84 (unless the student has had Economics 6-7, Principles of Economics, or its equivalent); six credits in Senior College courses in psychology, preferably Course 144-145; Philosophy 70; History 80-81-82 or 83-84-85 or at least six credits in Senior College courses in political science; two Senior College courses in preventive medicine.

(Prerequisites: For Sequence D, Soc. 1, 49; Political Science 1-2-3; Psychology 1-2. For recommended Junior College electives see the statement about preparation for graduate social work in the Bulletin of the College of Science, Literature, and the Arts.)

Students who are taking this Major Sequence D may elect, and get credit for, a maximum of 18 credits in the following courses in Art Education and Physical Education which are ordinarily not open to Science, Literature, and the Arts students. This privilege is primarily for students preparing for graduate training in group work directed to leadership in recreation.

Art Education

31	Orientation in Handcraft Processes
73	Ceramic Materials and Processes
75B	Bookbinding Process
75M	Metal Work
76	Textile Materials and Processes
81A-B	Techniques of Puppetry

Physical Education for Men

- 56 Nature and Function of Play
- 79 Camp Craft and Camp Administration
- 136E Leadership in Recreation
- 141 Administration and Supervision of Public Recreation
- 142 Group Leadership in Community Recreation

Physical Education for Women

- 23A,B Games and Rhythms for Primary, Intermediate, and High School Grades
- 43 Tap and Ballroom Dancing
- 54 Camp Leadership
- 60 Principles of Play
- 63 Techniques of Teaching Folk Dancing
- 80 Principles of Rhythm

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major adviser in the College of Education.—Professor Kirkpatrick.

Requirements for a teacher's certificate.—Major recommendation: 36 credits including 1, 6, and 14.

Minor recommendation: 19 or 20 credits including 1, 6, and 14.

Note.—Students majoring in sociology must complete two teaching minors in addition to the required professional courses. Teachers who already hold a teacher's certificate may be relieved of this requirement upon petition.

For a specialized curriculum in social studies and a curriculum for "Visiting Teachers" see the Bulletin of the College of Education.

Honors course.—Students interested in the work of an honors course should consult the chairman of the department.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f,w	Introduction to Sociology—The study of the culture of human society. An objective analysis of culture complexes, culture patterns, cultural processes; the influence of culture on the individual's behavior; social change; and social disorganization. (5 cred.; 3rd qtr. fr., soph., jr., sr.; no prereq.)				
	Lect.	I	TThS	BuAud	Mr. Monachesi
	Rec. Sec. 1	I	WF	14P	and others
	2	III	MW	110P	
	3	IV	MW	14P	
	4	VI	MW	109J	
	5	VII	MW	210P	
1f,w	Introduction to Sociology (For students of the College of Agriculture, Forestry, and Home Economics only) (3 cred.; no prereq.)				
		III	TThS	204OD	Mr. Nelson
1s	Introduction to Sociology (See 1f)				
	Lect.	I	TThS	BuAud	Mr. Monachesi
	Rec. Sec. 1	I	WF	2J	and others
	2	III	MW	2J	
	3	IV	MW	109J	
	4	VI	MW	109J	
	5	II	TTh	210P	
6	III	TTh	218P		
1s	Introduction to Sociology (For students of the College of Agriculture, Forestry, and Home Economics only) (3 cred.; no prereq.)				
		I	TThS	204OD	Mr. Nelson

No.	Title	Hour	Day	Bldg.	Instructor
6f	Social Interaction—Influences affecting group life; forms of interaction and communication; personality and its development in the social situation; attitudes and race prejudice; forms of opposition including warfare, class tensions, coercion and intolerance; present-day problems of co-operation, leadership, and social change in an age of science (3 cred.; soph., jr., sr.; prereq. 1. This course is not open to students who have had Soc. 100 or Psy. 140)				
		I	TThS	2P	Mr. Kirkpatrick
6w	Social Interaction (See 6f)	II	MWF	JAud	Mr. Kirkpatrick
6s	Social Interaction (See 6f)	III	MWF	JAud	Mr. Kirkpatrick
14f,w,s	Rural Sociology—A presentation of factual data necessary to an understanding of the problems of rural social life (3 cred.; soph., jr., sr.; prereq. 1)	IV	MWF	JAud	Mr. Nelson, Mr. Tannous
14f,w	Rural Sociology (For students of the College of Agriculture, Forestry, and Home Economics) (3 cred.; soph., jr., sr.; prereq. 1 or jr. class)	I	TThS	102Hr	Mr. Nelson, Mr. Tannous
45f	Social Statistics (5 cred.; soph., jr., sr.; prereq. 1. Not open to students who have received credit in Econ. 5)				
	Lect.	IV	MWF	104J	Mr. Sletto
	Lab.	VI, VII	TTh	104J	
45w	Social Statistics (See 45f)	VI	MWF	104J	Mr. Sletto
	Lect.	VI, VII	TTh	104J	
48f	Social Control and Criminal Behavior—A study of the basis of orderliness and law-abiding behavior and its disintegration into criminal behavior (3 cred.; 3rd qtr. soph., jr., sr.; prereq. 1)	III	TThS	2P	Mr. Vold
48s	Social Control and Criminal Behavior (See 48f)	III	TThS	2P	Mr. Vold
49f,w,s	Social Pathology (3 cred.; 3rd qtr. soph., jr., sr.; prereq. 10 cred. in soc. or Soc. 1 and 10 cred. in soc. sci. or psy.)	I	MWF	301F(f,w) 2P(s)	Mr. Sletto

Senior College Courses

Course 53 is open to third quarter sophomores who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

COURSES IN SOCIOLOGY

53f,w,s	Elements of Criminology—A general survey of the field of criminology (3 cred.; jr., sr.; prereq. same as for 49)	III	MWF	104J(f) 109J(w,s)	Mr. Vold
57	<i>Leisure in the Modern World</i> (3 cred.; open only to students in the College of Education; prereq. Soc. 1 or equiv.) (<i>Not offered</i>)				
60w	Social Protection of the Child (3 cred.; jr., sr.; prereq. 49)	I	TThS	104J	Mrs. Shea
90f,w	Survey of Social Work (5 cred.; jr., sr.; prereq. 49)	III	MWF	200Pt	Miss Phillips
		VII, VIII	TTh	200Pt	
91f	Case Method Applied to the Study of Human Problems (Not open to students in Sequence D) (3 cred.; jr., sr.; prereq. 49)	II	TThS	2J	Mrs. Fenlason
91s	Case Method Applied to the Study of Human Problems (See 91f)	III	TThS	2J	Mrs. Fenlason
97f-98w-99s	Tutorial and Honors Work in Selected Fields (9 cred.; jr., sr.; prereq. consent of major adviser in sociology)	Ar	Ar	Ar	Ar

No.	Title	Hour	Day	Bldg.	Instructor
100f	Social Psychology (3 cred.; jr., sr., grad.; prereq. Soc. 1 and 6, or Psy. 1-2, and 9 cred. in soc. sci., ed., phil., or psy.)	II	TThS	109J	Mr. Kirkpatrick
101s	Social Organization (3 cred.; jr., sr., grad.; prereq. 4 courses in soc. or Soc. 1 and 15 cred. in soc. sci., ed., phil., or psy.)	II	TThS	109J	Mr. Chapin
102s	Contemporary Penology (3 cred.; jr., sr., grad.; prereq. same as for 101, but including 53 or consent of the instructor)	II	MWF	14P	Mr. Vold
103w	Sociology of Conflict (3 cred.; jr., sr., grad.; prereq. same as for 101)	II	TThS	104J	Mr. Vold
105f	Criminological Theories—Historical and Contemporary (3 cred.; jr., sr., grad.; prereq. same as for 101, but including 53 or consent of instructor)	IV	MWF	109J	Mr. Vold
106	<i>Police Problems and Practices in the United States</i> —A study of personnel, organization, and public relations of police forces with special attention to successful techniques of integrating police work with other community agencies (3 cred.; jr., sr., grad.; prereq. same as for 101 or consent of instructor) (<i>Not offered</i>)				
107	<i>Adult Parole and Probation</i> —A critical examination of problems and practices in the supervision of adult criminals (3 cred.; jr., sr., grad.; prereq. same as for 101 but including 53 or consent of instructor) (<i>Not offered</i>)				
110f	Rural Community Organization (3 cred.; jr., sr., grad.; prereq. same as for 101)	I	MWF	2J	Mr. Nelson
112s	Problems in Rural Social Research (2 cred.; sr., grad.; prereq. same as for 101)	VIII-IX	M	2J	Mr. Nelson
114w	Rural Social Institutions (3 cred.; jr., sr., grad.; prereq. same as for 101)	II	MWF	109J	Mr. Nelson
115w	Religion As a Social Institution (3 cred.; jr., sr., grad.; prereq. same as for 101)	III	MWF	104J	Mr. Kirkpatrick
116	<i>The Newspaper As a Social Institution</i> (3 cred.; jr., sr., grad.; prereq. same as for 101) (<i>Not offered</i>)				
119f	The Family (3 cred.; jr., sr., grad.; prereq. same as for 101)	III	TThS	109J	Mr. Kirkpatrick
119s	The Family (See 119f)	II	MWF	109J	Mr. Kirkpatrick
120f	Social Life and Cultural Change (3 cred.; jr., sr., grad.; prereq. same as for 101)	II	MWF	14P	Mr. Schneider
122f	Statistical Methods (3 cred.; grad.*; prereq. 4 courses in soc.)	II	MWF	109J	Mr. Chapin
123s	Methods of Social Research (3 cred.; jr., sr., grad.; prereq. Soc. 45 or equiv.)	III	TThS	104J	Mr. Sletto
132f	Juvenile Courts and Probation (3 cred.; jr., sr., grad.; prereq. 53)	III	TThS	104J	Mr. Monachesi
140w	Sociological Theories from Ancient Times to August Comte (3 cred.; jr., sr., grad.; prereq. same as for 101)	I	MWF	2P	Mr. Schneider
145s	Contemporary Sociological Theory (3 cred.; jr., sr., grad.; prereq. same as for 101)	III	TThS	200Pt	Mr. Schneider
146¶	<i>Community Organization and the Social Setting of Recreation</i> (3 cred.; jr., sr., grad.; prereq. for Arts College students, 3 courses in soc.; for students in Education, 3 courses in soc. sci. including Soc. 57) (<i>Not offered</i>)				
147¶	<i>Group Leadership and Organization</i> (3 cred.; jr., sr., grad.; prereq. Soc. 146 or equiv.) (<i>Not offered</i>)				
148¶	<i>Supervisory Problems in Recreation</i> (Open only to majors or minors in recreation curriculum) (3 cred.; jr., sr., grad.; prereq. Soc. 147 or equiv.) (<i>Not offered</i>)				
160w	Population Problems (3 cred.; jr., sr., grad.; prereq. same as for 101)	III	MWF	2J	Mr. Sletto
161w	Social Aspects of Housing and Standards of Living (3 cred.; sr., grad.; prereq. same as for 101)	II	TThS	109J	Mr. Chapin

* For graduate students only, except by petition.

¶ Open only to majors in sociology and social work or recreation.

COURSES IN SOCIAL WORK

No.	Title	Hour	Day	Bldg.	Instructor
109f,w§	The Field of Social Work (2 cred.; grad.*; prereq. same as for 101, or consent of adviser and instructor)	I	TTh	2J	Mrs. Doyle
122f	Statistical Methods (Listed under the heading "Courses in Sociology," on page 103)				Mr. Chapin
124s	Community Organization (3 cred.; grad.*; prereq. 109 or equiv.)	I	TThS	2J	Miss Phillips
125f,w	Principles of Group Work (3 cred.; grad.*; prereq. 109, which may be taken simultaneously, or equiv.)	I	MWF	109J	Miss Phillips
126s	Problems of Supervision in Group Work (3 cred.; grad.*; prereq. 125, 156)	II.	TThS	2J	Miss Phillips
127s	Legal Aspects of Social Work (3 cred.; grad.*; prereq. 109, which may be taken simultaneously)	I	MWF	109J	Mr. Bachelder
128s	Principles of Administration, Publicity, and Finance Applied to Social Work (2 cred.; grad.*; prereq. same as for 101, but including 109 or equiv.)	VII, VIII	T	104J	Mr. Birt
129f-130w†	Principles of Social Case Work (6 cred.; grad.*; prereq. for 129 is 109, which may be taken simultaneously, prereq. for 130 is 129, 153)	III	TThS	2J	Mrs. Fenlason
129w-130s†	Principles of Social Case Work (See 129f-130w)	II	TThS	2J	Mrs. Fenlason
131s	Rural Social Work (3 cred.; grad.*; prereq. 129, 153, 114 or equiv.)	II	TThS	104J	Miss Vaile
132f	Juvenile Courts and Probation (This course is listed under the heading "Courses in Sociology," on page 103)				Mr. Monachesi
133s	Social Case Work in Health Problems (3 cred.; grad.*; prereq. 129, 136)	Ar	Ar	Ar	Ar
134	<i>Legal Protection of the Child</i> (3 cred.; grad.*; prereq. same as for 101 but including 60) (Not offered)				
135f	Survey of Social Work for Children (2 cred.; grad.*; prereq. 109, which may be taken simultaneously, or equiv.)	IV	TS	2J	Mrs. Shea
136Aw-Bs	Medical Information for Social Workers (4 cred.; grad.*; prereq. P.M.&P.H. 50 or 51 or equiv.)	IX	TTh	Ar	Med. Staff U. H.
137	<i>The History and Theory of Social Work</i> (3 cred.; grad.*; prereq. 109, which may be taken simultaneously) (Not offered)				
138f	Case Work with Children (3 cred.; grad.*; prereq. 130, 154)	II	TThS	104J	Mrs. Shea
138s	Case Work with Children (See Soc. 138f)	I	TThS	104J	Mrs. Shea
139w	Psychiatric Problems in Social Case Work (3 cred.; grad.*; prereq. 130, 154 or 221 and 170 or Psy. 144-145)	II	TThS	110P	Mrs. Shea
151f-152w†	Public Welfare (6 cred.; grad.*; prereq. 109 or equiv.)	IV VII	TS Th	109J	Miss Vaile
151w-152s†	Public Welfare (See 151f-152w)	I	TThS	109J	Miss Vaile

* For graduate students only, except by petition.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ This course is for mature students who have not had Courses 49 and 90.

No.	Title	Hour	Day	Bldg.	Instructor
153f,w,s†-					
154f,w,s†-					
155f,w,s‡	Field Training in Case Work (5 cred.; grad.*; prereq. 129, which may be taken simultaneously, or equiv.)	Ar	Ar	Ar	Mrs. Doyle
156f,w,s†-					
157f,w,s†-					
158f,w,s‡	Field Training in Group Work (2 to 6 cred. per qtr. to be determined by the adviser in social work; grad.*; prereq. 125, which may be taken simultaneously)	Ar	Ar	Ar	Miss Phillips
161w	Social Aspects of Housing and Standards of Living (This course is listed under the heading, "Courses in Sociology," on page 103)				Mr. Chapin
170f	Introductory Psychiatry (3 cred.; grad.*; no prereq.)	II	TThS	Ar	Dr. Berkwitz
171w	Descriptive Neuropsychiatry (The same as Medicine 171) (3 cred.; grad.*; prereq. 170 or equiv.)	4:00 to 5:00	MWF	Ar	Dr. Baker
172s	Advanced Considerations in Psychiatry (The same as Medicine 172) (1 cred.; grad.*; prereq. 171 or equiv.)	IV	T	Ar	Dr. Clarke
173Af	Behavior Problems in Younger Children (The same as Child Welfare 140) (2 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.)	I, II	S	202Pt	Miss Goodenough
173Bw	Behavior Problems in Older Children (The same as Child Welfare 141) (2 cred.; sr., grad.; prereq. 12 cred. in psy., ed. psy., or soc.)	I, II	S	202Pt	Miss Goodenough
174s	Seminar in Psychiatric Social Work (2 cred.; grad.*; prereq. 130, 170, 171 or equiv.)	VIII, IX	Th	Ar	Ar
175f	Advanced Medical Information for Social Workers (2 cred.; grad.*; prereq. 136A-B)	Ar	Ar	Ar	Med. Staff U. H.
197f-198w-199s	Special Topics in Social Work (Cred. ar.; grad.*)	Ar	Ar	Ar	Ar

For Graduate Students Only

COURSES IN SOCIOLOGY

200f-w-s	Seminar: Topics in Criminology—Latin-American Penology				Mr. Vold
201	Seminar: <i>Social Psychology of Family Relationships</i> (Not offered)				
202f-w-s	Seminar: Topics in Urban Sociology				Mr. Sletto
203f-204w-205s	Seminar in Social Theory				Staff
206-207-208	Seminar: <i>Statistical Theory in Relation to Social Theory and Practice</i> (Not offered)				
209f-210w-211s	Seminar: The Theory of Social Evolution				Staff
215f	Seminar in Rural Sociology: Rural Life in Latin America				Mr. Nelson
216w	Seminar in Rural Sociology: Rural Life in Selected Countries of Europe				Mr. Nelson
217s	Seminar in Rural Sociology: Current Rural Social Problems in the United States				Mr. Nelson
234f,w,s	Seminar in Juvenile Delinquency and Treatment				Mr. Monachesi
238w-239s†	Principles of Sociology (6 cred.)				Mr. Monachesi

COURSES IN SOCIAL WORK

218f-w-s	Seminar in Family Case Work				Mrs. Fenlason
219f-w-s	Seminar in Case Work with Children				Mrs. Shea
220f-w-s	Seminar in Medical Social Work				Ar

* For graduate students only, except by petition.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$3.50 is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
221f,w,s†					
222f,w,s†					
223f,w,s†	Graduate Field Training				Staff
224f-225w-226s	Advanced Medical Social Work				Ar
227f,w,s†					
228f,w,s†					
229f,w,s†	Advanced Field Training				Staff
230f-w-s	Seminar in Public Welfare				Miss Vaile
231f-w-s	Seminar in Group Work				Miss Phillips
232f-w-s	Seminar in Rural Social Work				Miss Vaile
233f-w-s	Seminar in Social Agencies and Social Institutions				Mrs. Doyle
234f-w-s	Seminar in Juvenile Delinquency and Treatment (This course is listed ing "Courses in Sociology," on page 105)				under the head- Mr. Monachesi
235f-w-s	Thesis Preparation				Staff
236f-w-s	Special Studies in Social Work				Staff
237f,w,s	Recent Research in Social Work				Mrs. Shea

SPANISH

See Romance Languages, page 97.

SPEECH

Major advisers in the College of Science, Literature, and the Arts.—Professor Rarig; Associate Professors Bryngelson and Lees; Assistant Professor Gilkinson.

Major sequences in the College of Science, Literature, and the Arts.—

A. Courses 55-56-57; 61, 67; 101-102; 105 or 109; 81-82-83.

B. Courses 34; 81-82-83; 91, 92, 93; 111-112-113 and a comprehensive examination in the theater.

C. Courses 61; 67; 121-122; 162-163; 141-142-143.

(Prerequisites: 1-2-3 or 5-6; Psychology 1-2. For Sequence B, Speech 31, 32-33 are required. For Sequence C, Psychology 4-5 and Physiology 2 are also required.)

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major advisers in the College of Education.—Professor Rarig; Associate Professors Bryngelson and Lees; Assistant Professor Gilkinson.

Requirements for a teacher's certificate.—Major recommendation: Speech 1-2-3 or 5-6; 31, 32, 55-56, 61, 67, 81-82, 121-122; total, 39 or 40 credits. Psychology 4-5 is advised.

Minor recommendation: Students minoring in speech are required to take Speech 1-2-3 or 5-6 plus other speech courses totaling 27 hours. These courses are to be selected with the aid of an adviser according to the needs of the student. Differential sequences are recommended according to whether the student is primarily interested in General Speech, Theater, Interpretation, or Speech Pathology.

All students majoring or minoring in speech must present satisfactory evidence of interest and effective participation in one or more activities, such as debating, dramatics, oratory, public reading, and public speaking.

Because of the close relation between English and speech in the high schools of Minnesota, students majoring in speech must have a minor in English as well as one other minor.

Students majoring in speech should register for Ed.T. 66Am, the Teaching of Composition in Senior High School, as well as Special Methods and Directed Teaching in Speech, Ed.T. 88A-88B-88C. See the program of the College of Education.

† A fee of \$3.50 per quarter is charged for this course.

Students interested in preparing for clinical work in speech correction in public schools should read the statement of the specialized curriculum in "Speech Pathology" in the Bulletin of the College of Education.

Speech activities.—All students in the University are entitled to participate in Intercollegiate Debating, the Freshman-Sophomore Debate, the Freshman-Sophomore Oratorical Contest, the Pillsbury Oratorical Contest, the Verse Reading Contest, and the activities of the University Theatre.

Note.—The University maintains a clinical service for students with speech defects. Students who desire treatment should consult the director of the Speech Clinic, 411 Folwell Hall. The clinic also accepts a limited number of full-time outpatients who pay a fee of \$50 per quarter. Part-time outpatients pay \$30 per quarter.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w-3s*††	Fundamentals of Speech (9 cred.; soph., jr., sr.; prereq.* Eng. A-B-C or Comp. 4-5-6 or exemption)				
	Sec. 1	I	MWF	308F	Mr. Gilkinson
	2	II	MWF	303F	and others
	3	III	MWF	306F	
	4	VI	MWF	308F	
	5	I	TThS	305F	
	6	II	TThS	308F	
	7	III	TThS	308F	
	8	VII	MWF	308F	
	9 (Child Welfare majors)	VII (f,w only)	MWF	105F	
	(Dental hygiene students only)	IV	MWF	305F	
1w-2s*†	Fundamentals of Speech (2 qtrs. of 1-2-3. See 1f-2w-3s)	II	MWF	6F	
3f*†	Fundamentals of Speech (3rd qtr. of 1-2-3. See 1f-2w-3s)	II	MWF	308F	
5f-6w*††	Fundamentals of Speech (10 cred.; soph., jr., sr.; prereq.* Eng. A-B-C or Comp. 4-5-6 or exemption)				
	Sec. 1	III	MTWThF	5F	
	2	IV	MTWFS	303F	
	3	VI	MTWThF	6F	
5w-6s*††	Fundamentals of Speech (See 5f-6w)				
	Sec. 1	IV	MTWFS	205F	
	2	VI	MTWThF	305F	
5s*†	Fundamentals of Speech (1st qtr. of 5-6. See 5f-6w)				
	Sec. 1	III	MTWThF	5F	
	2	IV	MTWFS	306F	
6f*†	Fundamentals of Speech (2nd qtr. of 5-6. See 5f-6w)	VI	MTWThF	305F	
31f††	Introduction to the Theater (3 cred.; soph., jr., sr.; prereq. 1-2-3 or 5-6 or concurrent registration)	I	MWF	19Mu	Mr. Whiting
32w-33s††||	Beginning Acting, Creative and Technical Approaches (6 cred.; soph., jr., sr.; prereq. Sp. 31)				
	Sec. 1	I	MWF	19Mu	Mr. Whiting
	2	II	MWF	19Mu	Ar
	3	I	MWF	5F	Ar
34w††	Stagecraft—Construction and Painting (3 cred.; soph., jr., sr.; prereq. 31)	VIII, IX	MWF	Stage Mu	Ar

* Registration is limited. Written permission from the Junior College office, 106 Folwell Hall, is necessary for admission.

† To receive credit for any part of this course a student must complete the parts preceding the dagger. Exception: Students in Education not majoring in Speech may receive credit for Course 1-2.

†† A fee of \$1 per quarter is charged for this course.

|| A fee of \$2 per quarter is charged for this course.

|| Majors in Speech in the College of Education are required to complete only two quarters each of Courses 31, 32-33 and 55-56-57.

Senior College Courses

Courses 51, 67, 81-82-83 are open to Junior College students who have an average grade of at least C in the prerequisite courses. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

No.	Title	Hour	Day	Bldg.	Instructor
51s†	Advanced Public Speaking (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6)	II	MWF	308F	Ar
55f-56w-57s†‡	Argumentation and Debating (9 cred.; jr., sr.; prereq. 1-2-3 or 5-6; Phil. 2, Logic, is recommended)	VI	T	308F	Ar
		VI, VII	Th	308F	Ar
61f†	Speech Hygiene (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; Psy. 1-2)	VI	MWF	306F	Mr. Bryngelson
65s†	Radio Speech—Speech arts and psychology of the radio. Practice, exercises, projects, and reports on problems of appeal and audience response. (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6)	VIII	MWF	302MurH	Mr. Ziebarth
66f‡	Radio Drama—Study of fundamental problems of directing and acting radio drama (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6; 65 recommended)	III	MWF	19Mu	Mr. Erekson
67f,s†¶	Phonetics (3 cred.; jr., sr.; prereq. 1-2-3 or 5-6)	II	MWF	305F(f) 321F(s)	Miss Hurd
78w-79s†‡	Advanced Acting—Characterization and Make-up (6 cred.; jr., sr.; prereq. 31, 32-33)	III	MWF	19Mu	Mr. Erekson
81f-82w-83s†	Interpretative Reading (9 cred.; jr., sr.; prereq. 1-2-3 or 5-6)	IV	MWF	308F	Mr. Rarig
81w-82s†	Interpretative Reading (See 81f-82w-83s)	I	TThS	308F	Mr. Rarig
83f†	Interpretative Reading (3rd qtr. of 81-82-83. See 81f-82w-83s)	I	TThS	308F	Mr. Rarig
91w†‡	Stage Design (3 cred.; jr., sr.; prereq. 31)	VI	MWF	19Mu	Mr. Whiting
92s†‡	Stage Lighting (3 cred.; jr., sr.; prereq. 31)	VI	MWF	19Mu	Mr. Whiting
93f†‡	Stage Costuming (3 cred.; jr., sr.; prereq. 31)	VI	MWF	19Mu	Mr. Whiting
97f,w,s	Intercollegiate Oratory and Debate (3 cred.; jr., sr.; prereq. §)	Ar	Ar	308F	Mr. Rarig
101f-102w†	Persuasion (6 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6; Psy. 1-2; 10 cred. in soc. sci.)	III	MWF	308F	Mr. Rarig
105s*	Theory of Reading and Acting (3 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6; 81-82-83, and Psy. 1-2)	III	MWF	308F	Mr. Rarig
107	Platform Reading (3 cred.; prereq. 81-82-83 with grade of B in 83) (<i>Not offered</i>)				
109*	Classical Rhetoric (3 cred.; jr., sr., grad.; prereq. 101-102, Psy. 140) (<i>Not offered</i>)				
111f-112w-113s†‡	Stage Direction (9 cred.; sr., grad.; prereq. 31, 32-33, 34, 91-92-93)	VII	MWF	19Mu	Mr. Lees
115f-116w-117s	Playwriting and Production (117s: Writing radio drama) (1 to 3 cred. per qtr.; sr., grad.; prereq. 31, 32-33 and permission of instructor)	III	MWF	109Mu	Mr. Lees

* Courses 105 and 109 are offered in alternate years.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per quarter is charged for this course.

‡‡ A fee of \$2 per quarter is charged for this course.

§ Open to representatives of the University in the Northern Oratorical League and to members of the intercollegiate debate squad.

¶ Students intending to take Speech Pathology should take Phonetics the preceding spring.

|| Majors in Speech in the College of Education are required to complete only two quarters each of Courses 31, 32-33 and 55-56-57.

No.	Title	Hour	Day	Bldg.	Instructor
121w-122s†	Advanced Speech Problems (6 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6, Psy. 1-2)	II	TThS	306F	Mr. Gilkinson
131f‡	Community Dramatics (Children's Theater)—The cultural values of community and children's theaters. Dramatic educational and critical literature of the field. Specimen projects, reports, term papers (3 cred.; sr., grad.; prereq. 91-92-93 and 111-112-113, or permission of instructor)	IX	MTWTh	19Mu	Mr. Lees
141f-142w-143s	Voice Science (9 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6, 67; Psy. 1-2 and 4-5)	VII	MWF	406F	Mr. Brown
162w-163s†¶	Speech Pathology (6 cred.; jr., sr., grad.; prereq. 1-2-3 or 5-6; 61, 67; and permission of instructor)	VI VI, VII	T Th	406F	Mr. Bryngelson
164f-165w-166s	Clinical Methods and Practice in Speech Pathology (9 cred.; sr., grad.; prereq. 1-2-3; 61, 67, 162, and Ed.Psy. 142. May be taken simultaneously with Sp. 163)	VIII	WF	406F	Mr. Bryngelson and ar.
171-172-173**	<i>History of the Theater</i> (9 cred.; sr., grad.; prereq. 1-2-3 or 5-6; 31) (<i>Not offered</i>)				
174f-175w-176s**	Theater Backgrounds (9 cred.; sr., grad.; prereq. 1-2-3 or 5-6; 31. Courses in literature recommended)	IV	MWF	18Mu	Mr. Lees
181f-182w-183s	Readings in Speech—Directed reading and preparation of reports on selected subjects (Cred. ar.; jr., sr., grad.; prereq. 1-2-3 or 5-6 and six additional credits and consent of instructor)	Ar	Ar	Ar	Mr. Rarig, Mr. Bryngelson, Mr. Gilkinson, Mr. Lees
191f-192w-193s	Technical Problems—Advanced problems in the technical phases of the theater. Special problems are assigned to individual students (9 cred.; jr., sr., grad.; prereq. 111-112-113)	II	MWF	19Mu	Mr. Lees, Mr. Whiting

For Graduate Students Only

201f,w,s	General Seminar	Ar	Ar	Ar	Staff
207f-208w-209s	Seminar in Rhetoric and Persuasion	Ar	Ar	Ar	Mr. Rarig
211f-212w-213s	Seminar in Dramatic Theory	VIII-IX	M	18Mu	Mr. Lees
221f-222w-223s	Seminar in Oral Interpretation of Literature	Ar	Ar	Ar	Mr. Rarig
231f-232w-233s	Seminar in Advanced Speech Problems	Ar	Ar	Ar	Mr. Gilkinson
261f-262w-263s	Seminar in Speech Pathology	Ar	Ar	Ar	Mr. Bryngelson, Mr. Brown
291f-292w-293s	Research in Special Problems	Ar	Ar	Ar	Mr. Rarig, Mr. Bryngelson, Mr. Gilkinson, Mr. Lees, Mr. Brown

SWEDISH

See Scandinavian, page 99.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$2 per quarter is charged for this course.

¶ Students intending to take Speech Pathology should take Phonetics the preceding spring.

** Courses 171-172-173 and 174-175-176 are offered in alternate years.

VOCATIONAL ORIENTATION

No.	Title	Hour	Day	Bldg.	Instructor
1f,w,s	Vocational Orientation—This course is an introduction to the University of Minnesota agencies which help students make educational and vocational plans. There will be discussions and lectures about the best methods of making choices. Some of the lectures will be illustrated by motion pictures. There will be opportunities for students to hear speakers from different university departments and community business organizations and to have individual conferences with instructors and counselors (2 cred.; all; no prereq.)	II	MWF	133Ph	Mr. Hahn

ZOOLOGY

Major adviser in the College of Science, Literature, and the Arts.—Professor Minnich.

Major sequences in the College of Science, Literature, and the Arts.—

A. In Zoology, 27 credits in Senior College courses of which at least 18 must be in courses with numbers between 49 and 100.

B. In special fields as cytology, ecology, embryology, entomology, genetics, histology, parasitology, physiology, or protozoology, a major will consist of the respective one-hundred courses, 5 or more credits in a problem course in the special field, and additional credits in approved courses to make a total of 27 credits in Senior College courses.

(Prerequisites: 1-2-3 or equivalent and 21, 22, or equivalent. If possible beginning chemistry and at least one year of French or German should be completed during the Junior College work.)

Modifications of these sequences will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

Major advisers in the College of Education.—Professor Wodsedalek and Associate Professor Ringoen.

Requirements for a teacher's certificate.—Major recommendation: General Zoology, Zoology 52, 53, 75, 83, and Physiology 4.

Minor recommendation: A minimum of 18 credits including General Zoology, Zoology 53 and 75.

For a specialized curriculum in Natural Science see College of Education Bulletin.

Honors Course in Zoology.—A student who has met all of the requirements for admission to the Senior College and who has maintained a grade of B in his work in the department may enroll for the Honors Course in Zoology. Such a student will carry at least twelve hours of problem work in some special phase of the work and will pursue under the direction of his adviser such special reading and outline courses as may be required. The completion of the Honors Course will require a reading knowledge of either French or German.

Courses in human anatomy, embryology, and hematology may be arranged for with the head of the Department of Anatomy.

Courses in physiology may be arranged for with the head of the Department of Physiology.

Junior College Courses

As‡	Survey of Human Parasites with Special Reference to the Present Emergency (3 cred.; all; no prereq.)			
	Lect.	VII	WF 208Z	Mr. Riley,
	Lab.	VIII, IX	WF 208Z	Mr. Wallace

‡ A fee of \$1 per quarter is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
1f-2w-3s*†‡	General Zoology (10 cred.; all; no prereq.)				
	Lect. Sec. 1 (Limited to 320)	II	TTh	06Bo	Mr. Minnich
	2 (Limited to 320)	III	WF	06Bo	Mr. Wodsedalek
	3 (Limited to 320)	IV	WF	06Bo	Mr. Olson
	Lab. Sec. 1 (Limited to 150)	I, II	MF	101Z	Ar
	2 (Limited to 174)	III, IV	MF	101Z	Ar
	3 (Limited to 174)	VI, VII	MF	101Z	Ar
	4 (Limited to 174)	VIII, IX	MF	101Z	Ar
	5 (Limited to 174)	III, IV	TS	101Z	Ar
	6 (Limited to 174)	VIII, IX	TTh	101Z	Ar
14f-15w†‡	General Zoology (For students of the College of Agriculture, Forestry, and Home Economics) (6 cred.; all; no prereq.)				
	Lect. (Limited to 174)	VIII	TTh	06Bo	Mr. Dawson
	Lab.	VI, VII	TTh	101Z	Ar
21f‡§	Histology (5 cred.; soph., jr., sr.; prereq. 1-2-3) (Sections limited to 40 each. Written permission must be obtained from the Junior College office, 106 Folwell Hall)				
	Lect.	III	TThS	313Z	Mr. Ringoen,
	Lab. Sec. 1	I, II	TThS	201Z	Miss Slider
	2	VI, VII, VIII	TTh	201Z	
	3	I, II	MWF	201Z	
22w†‡	Comparative Anatomy (5 cred.; soph., jr., sr.; prereq. 1-2-3) (Sections 1 and 2 limited to 40 each, section 3 limited to 30. Written permission must be obtained from the Junior College office, 106 Folwell Hall)				
	Lect.	III	TThS	313Z	Mr. Eddy
	Lab. Sec. 1	VI, VII, VIII	TTh	3SZ	
	2	VI, VII, VIII	MW	3SZ	
46w-47s†	Ornithology (6 cred.; soph., jr., sr.; prereq. 1-2-3 and permission of instructor)				
	Lect.	VI, VII, VIII	MW	307MNH	Dr. Roberts

Senior College Courses

Courses 50, 51, 52, 53, 81, 82, and 83 are open to sophomores who have a grade of at least C in Course 1-2-3. Other Senior College courses in this department are open to Junior College students only by special permission of the Students' Work Committee. See a statement on page 19.

50s†††§	Introduction to Comparative Physiology (5 cred.; soph., jr., sr.; prereq. 1-2-3 or 15 cred. in bot.; and 10 cred. in chem. or permission of instructor) (Section limited to 20)				
	Lect.	III	TThS	211Z	Mr. Clark
	Lab.	I, II	TThS	10Z	
51f†††	Introductory Animal Parasitology (5 cred.; jr., sr.; prereq. 1-2-3) (Sections are limited. Lab. reservations must be made in the Junior College office, 106 Folwell Hall)				
	Lect.	VI	MWF	313Z	Mr. Riley,
	Lab. Sec. 1 (Limited to 80)	VII, VIII	MWF	208Z	Mr. Wallace
	2 (Limited to 40)	I, II	MWF	208Z	
	3 (Limited to 40)	III, IV	MWF	208Z	
52w†††	Introductory Entomology (5 cred.; jr., sr.; prereq. 1-2-3) (Section limited to 26. Written permission must be obtained from the Junior College office, 106 Folwell Hall)				
	Lect.	VI	MWF	211Z	Mr. Mickel
	Lab.	VII, VIII	MWF	402Z	
53s†††	Faunistic Zoology (5 cred.; jr., sr.; prereq. 1-2-3) (Limited to 40. Written permission must be obtained from the Junior College office, 106 Folwell Hall)				
	Lect.	VI	MWF	211Z	Mr. Eddy
	Lab.	VII, VIII	MWF	3SZ	
			IX	F	3SZ

* Lectures may be elected without laboratory with the consent of the chairman of the department. Laboratory must be taken with the lectures, however, if zoology is offered as the required laboratory science. Students should elect lecture sections in which they can continue throughout the three quarters.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per quarter is charged for this course.

†† A fee of \$2 is charged for this course.

††† A fee of \$1 is charged for this course.

§ Not open to regular three-year premedical and pre dental students.

No.	Title	Hour	Day	Bldg.	Instructor
75s‡	Nature Study (3 cred.; jr., sr.; prereq. 15 cred. including 1-2-3. Required of all zoology majors and minors in the College of Education in the junior year) Lect. and lab.	VI, VII, VIII	TTh	204Z	Mr. Wodsedalek
81f‡	Invertebrate Zoology (3 cred.; jr., sr.; prereq. 1-2-3) (Limited to 24. Written permission must be obtained from the Junior College office, 106 Folwell Hall) Lect. and lab.	I, II	MWF	211Z	Mr. Dawson
82w	Organic Evolution (3 cred.; jr., sr.; prereq. Zool. 1-2-3 or Bot. 1, 7, 21) Lect.	II	MWF	313Z	Mr. Dawson
83f,s	Introduction to Genetics and Eugenics (3 cred.; jr., sr.; prereq. 1-2-3 or 10 cred. in bot.) Lect.	II	MWF	313Z	Mr. Oliver
107f‡-108w‡	Protozoology (6 cred.; jr., sr., grad.; prereq. 15 cred.) Lect. and lab.	I, II	TThS	208Z	Mr. Osterud
109f‡-110w‡- 111s‡	General Physiology of Animal Reactions (9 cred.; jr., sr., grad.; prereq. 15 cred.) Lect. and lab.	III, IV	MWF	211Z	Mr. Minnich, Mr. Clark, Mr. Schmitt
112f	Advanced Comparative Physiology (3 cred.; jr., sr., grad.; prereq. 15 cred. with consent of instructor) Lect.	Ar	Ar	211Z	Mr. Clark
113w‡	Laboratory Methods in General Physiology of Absorption and Secretion Problems (3-5 cred.; grad.; prereq. 112 and consent of instructor) Lab.	Ar	Ar	3Z	Mr. Clark
117f‡-118w- 119s‡‡	Animal Ecology (9 cred.; jr., sr., grad.; prereq. 15 cred.) Lect. Lab.	VI VII, VIII	TTh TTh	211Z(f,s) 3SZ(f,s) 301AdUF(w)**	Mr. Eddy Mr. Hodson
120s‡	General Ecology of Insects (3 cred.; jr., sr.; prereq. 15 cred. in zool. or ent.) Lect.	VI, VII, VIII	TTh	15Ad(UF)	Mr. Hodson
121f‡	Ichthyology (3 cred.; jr., sr., grad.; prereq. 15 cred.) Lect. Lab.	VIII, IX Ar	F Ar	211Z Ar	Mr. Eddy
125f‡-126w‡- 127s‡	Advanced Entomology (9 cred.; jr., sr., grad.; prereq. 15 cred.) Lect. Lab.	I I, II, III	TTh S	211Z 402Z	Mr. Mickel
132	<i>General Physiology of Development</i> (3 cred.; jr., sr., grad.; prereq. 50 and 180 or consent of instructor) (<i>Not offered</i>)				
133s	Genetics of Development (3 cred.; jr., sr., grad.; prereq. proper preparation in advanced genetics or consent of instructor) VI		MWF	209Z	Mr. Oliver
144f‡-145w‡- 146s‡	Animal Parasites and Parasitism (6 or 9 cred.; jr., sr., grad.; prereq. 15 cred.) Lect. and lab.	VI, VII, VIII	TTh	208Z	Mr. Riley, Mr. Wallace
149w‡-150s‡	Histology and Organology (6 cred.; jr., sr., grad.; prereq. 15 cred. in zool.) Lect. and lab.	VI, VII, VIII	TTh	209Z, 201Z	Mr. Ringoen
155w	Physiology in Relation to Physics (3 cred.; jr., sr., grad.; prereq. 15 cred. in biol. sci. and consent of instructor. Physics recommended) Lect.	VI, VII	TTh	Ar	Mr. Schmitt
160f‡-161w‡	Cytology (6 cred.; jr., sr., grad.; prereq. 15 cred. with consent of instructor) Lect. and lab.	VI, VII, VIII	TTh	204Z	Mr. Wodsedalek

‡ A fee of \$1 is charged for this course.

‡‡ Either 119s or 120s or both may be taken to complete Course 117f-118w.

** Note that in the winter quarter this course is offered at the University Farm.

No.	Title	Hour	Day	Bldg.	Instructor
170f‡-171w‡	Advanced Genetics (6 cred.; jr., sr., grad.; prereq. 15 cred. including Course 83, or consent of instructor) Lect. and lab.	VI, VII, VIII	MW	209Z	Mr. Oliver
180f‡	Comparative Embryology (3 cred.; jr., sr., grad.; prereq. 15 cred. including Course 21 or equiv.) Lect. and lab.	III, IV	MWF	313Z	Mr. Ringoen
181w	Endocrines and Reproduction (3 cred.; jr., sr., grad.; prereq. 15 cred. including Course 21 or equiv.) Lect.	III	MWF	313Z	Mr. Ringoen
182s	Experimental Embryology (3 cred.; jr., sr., grad.; prereq. 15 cred. including Course 21 or equiv.) Lect.	III	MWF	313Z	Mr. Ringoen
197f-198w-199s	Problems (5 or more cred.; jr., sr., grad.; prereq. 1-2-3, special requirements)	Ar	Ar	Ar	Ar

ENTOMOLOGY AND ECONOMIC ZOOLOGY.

Students in this college may elect courses in Entomology and Economic Zoology by arrangement with the department. But before registering for any courses they should get the approval of Assistant Dean Shumway, 219 Administration Building. See the program of the College of Agriculture, Forestry, and Home Economics, in another part of this bulletin.

‡ A fee of \$1 is charged for this course.

COLLEGE OF EDUCATION

Junior College courses, primarily for freshmen and sophomores, are numbered from 1 to 49; Senior College courses, primarily for juniors and seniors, are numbered from 50 to 99; courses numbered from 100 to 199 are primarily for seniors and graduates; courses numbered 200 and above are for graduate students only.

Since beginning teachers are usually expected to teach several subjects in addition to their major, it is desirable that the student select the best possible combinations of subjects. It is also desirable to secure training in one or more extracurricular activities. English teachers are urged to secure credits in library work. Social studies teachers will find a minor in science, mathematics, or a foreign language a valuable addition to their training. Certain selected courses in physical education are recommended for women in some cases. Students may consult Mr. C. P. Archer in the Bureau of Recommendations about opportunities in the various fields of education for men and women with a Bachelor's degree. They should consult their major advisers, or Miss Marcia Edwards, assistant to the dean, or Miss Jean H. Alexander, chairman of the Students' Work Committee, about planning their programs to the best advantage. All curricula leading to a B.S. degree and a teaching certificate in Minnesota are outlined in the College of Education Bulletin.

Because the regulations and requirements in subject-matter fields and in education necessary for certification in different states are constantly changing, students who plan to teach in states other than Minnesota should secure a statement of requirements for certification and consult their major advisers in the College of Education in order that they may fully complete the requirements for the specific state in which they have to teach.

Classes whose meeting place is not scheduled in this bulletin will be assigned rooms at the opening of each quarter. Consult the Official Daily Bulletin or the bulletin board at 210 Burton Hall.

GENERAL COURSES

Note.—This course should be taken in the order of Ed. 51C-A-B. Ed. 51C is The High School, Ed. 51A is Educational Psychology, and Ed. 51B is Technique of High School Instruction.

No.	Title	Hour	Day	Bldg.	Instructor
Ed.51Cf-51Aw-51Bs††	Introduction to Secondary School Teaching (9 cred.; jr.; prereq. 6 cred. in psy. and a C average). Students registering in these sections must complete the entire nine credits in Sec. 1 or Sec. 2. They cannot transfer to other sections in the winter and spring quarters. New students cannot enter in the winter or spring quarters.				
	Sec. 1	III	MWF	210Bu	Mr. Boardman, Mr. Cook
	2	VII	MWF	210Bu	Mr. Bossing, Mr. Wrenn
Ed.51Cf-51Aw-51Bs††	Introduction to Secondary School Teaching (See 51C-A-B)	I	MWF	210Bu	Mr. Anderson(f) Miss Eckert(w) Mr. Morse(s)
Ed.51Af††	Introduction to Secondary School Teaching (See 51C-A-B)				
	Sec. 1	I	MWF	106Pt	Mr. Miller
	2	III	TThS	210Bu	Ar

† The entire course including the final examination covering all units must be completed satisfactorily before credit is given for any quarter. Graduates of teachers colleges should consult their advisers before registering for any part of the course.

‡ A fee of \$1 per credit is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
Ed.51Aw†‡	Introduction to Secondary School Teaching (See 51C-A-B)	III	TThS	210Bu	Mr. Van Wagenen
Ed.51As†‡	Introduction to Secondary School Teaching (See 51C-A-B)	I	MWF	Ar	Mr. Miller
	Sec. 1	III	TThS	210Bu	Mr. Van Wagenen
	2				
Ed.51Bf†‡	Introduction to Secondary School Teaching (See 51C-A-B)	II	TThS	210Bu	Ar
Ed.51Bw†‡	Introduction to Secondary School Teaching (See 51C-A-B)	II	TThS	210Bu	
Ed.51Cw†‡	Introduction to Secondary School Teaching (See 51C-A-B)	II	MWF	210Bu	Mr. Boardman
	Sec. 1	VIII	MWF	210Bu	Ar
	2				
Ed.51Cs†‡	Introduction to Secondary School Teaching (See 51C-A-B)	II	TThS	210Bu	Ar
Ed.61Af-61Bw†‡	Introduction to Elementary School Teaching (6 cred.; jr.; prereq. 6 cred. in psy. and a C average) (This course is to be followed by 61C in either the junior or the senior year)	VI-VII	TTh	210Bu	Mr. Van Wagenen(f), Dem.Sch. Mr. Brueckner(w)
Ed.61Cs†‡	Introduction to Elementary School Teaching (3 cred.; jr., sr.; prereq. 61A-B) (This course may follow 61A-B in either the junior or senior year)	VII	M	Ar	Mr. Neale
		VI-VII	W		
Ed.Wf,w,s	Professional Preparation for Teaching—This classification is designed for students already holding a baccalaureate degree who desire to complete their preparation for teaching and qualify for the state teacher's certificate. Such students should consult the adviser as to their eligibility and outline for approval a program covering at least three quarters of study. Courses must be selected so as to meet all requirements for major, minor, and professional training. The entire program must be approved by the adviser and completed successfully before credit is allowed for any of the courses taken. (Minimum of 45 cred.; prereq. a Bachelor's degree, a minimum of 135 cred., a 1.75 average in all previous work, and the consent of the course adviser.)	Ar	Ar	Ar	Mr. Anderson

AGRICULTURAL EDUCATION

Major adviser.—Professor Field.

Agr.Ed.1w,s	Introduction to Agricultural Education (1 cred.; fr.; no prereq.)	VI	M	301Hr	Mr. Ekstrom
	Winter	Ar	Ar	301Hr	Mr. Ekstrom
	Spring				
Agr.Ed.54f,w	Rural Education and Community Leadership (2 cred.; jr., sr.; prereq. Ed. 51A)	IV and	T	301Hr	Mr. Field
	1 hr. ar.				
Agr.Ed.56w	Rural Youth Leadership (3 cred.; jr., sr.; no prereq.) (Offered in odd numbered years only)	II	MWF	301Hr	Mr. Harden and others
Agr.Ed.81f,s‡	Teaching Agriculture (3 cred.; jr.; prereq. Ed. 51A)	IV	MWF	301Hr	Mr. Field
Agr.Ed.82f,w‡	Methods in Teaching Agriculture (3 cred.; sr.; prereq. 81)	III	MWF	301Hr	Mr. Field
Agr.Ed.83w‡	Methods in Teaching Agriculture (Continuation of 82) (2 cred.; sr.; prereq. 82)	III	TTh	301Hr	Mr. Field

† The entire course including the final examination covering all units must be completed satisfactorily before credit is given for any quarter. Graduates of teachers colleges should consult their advisers before registering for any part of the course. Students who have completed 51A may register for either 51C or 51B.

‡ A fee of \$1 per credit is charged for this course.

COLLEGE OF EDUCATION

No.	Title	Hour	Day	Bldg.	Instructor
Agr.Ed.90f,w,s†	Observation and Participation (2 cred.; jr., sr.; prereq. 81)	Ar	Ar	Ar	Mr. Field, Mr. Ekstrom
Agr.Ed.91f,w,s†	Supervised Teaching Experience (3 cred.; sr.; prereq. 82 and a C+ average in the major)	Ar	Ar	Ar	Mr. Field, Mr. Ekstrom
Agr.Ed.101f	Part-time School Instruction (2 cred.; sr.; prereq. 81)	III	TTh	301Hr	Mr. Ekstrom
Agr.Ed.102w	Evening School Instruction (3 cred.; sr.; prereq. 81)	III	MWF	301Hr	Mr. Ekstrom
Agr.Ed.103s	Facilities and Materials (3 cred.; sr.; prereq. 82)	III	MWF	301Hr	Mr. Ekstrom
Agr.Ed.104s	Planning Programs (2 cred.; sr.; prereq. 82)	III	TTh	301Hr	Mr. Field
Agr.Ed.121	<i>Enterprise Analysis</i> (2 cred.; prereq. Ed. 51A) (<i>Not offered</i>)				
Agr.Ed.135	<i>Curriculum in Vocational Education</i> (3 cred.; prereq. Agr. Ed. 81) (<i>Not offered</i>)				
Agr.Ed.141	<i>Supervised Practice in Vocational Agriculture</i> (3 cred.; prereq. 10 cred. in ed.) (<i>Offered in Summer Session. Not offered in 1942-43</i>)				
Agr.Ed.145	<i>The Integrated Course of Study in Agriculture</i> (2 or 3 cred.; sr., grad.; prereq. 10 cred. in ed.) (<i>Offered in Summer Session. Not offered in 1942-43</i>)				
Agr.Ed.154f,w	Rural Education and Community Leadership (2 cred.; prereq. 10 cred. in ed.)	Ar	Ar	Ar	Mr. Field
Agr.Ed.191f-192w-193s	Seminar in Agricultural Education (No cred.)	Ar	Ar	Ar	Mr. Field, Mr. Ekstrom
Agr.Ed.199Ef,w,s	Internship (Cred. ar.)	Ar	Ar	Ar	Mr. Field, Mr. Ekstrom
Agr.Ed.221f-222w-223s	Graduate Problems (3 cred. per qtr.)	Ar	Ar	Ar	Mr. Field, Mr. Ekstrom
Agr.Ed.232f,w,s	Research in Agricultural Education (2 to 9 cred.; grad.; prereq. 15 cred. in ed.)	Ar	Ar	Ar	Mr. Field, Mr. Ekstrom
Agr.Ed.237	<i>Adult Education in Agriculture</i> (2 to 3 cred.; grad.; prereq. 15 cred in ed.) (<i>Offered in Summer Session. Not offered in 1942-43</i>)				
Agr.Ed.238	<i>Planning and Evaluating Programs of Agricultural Education</i> (<i>Not offered</i>)				
Agr.Ed.286	<i>Special Problems in Agricultural Education</i> (2 to 3 cred.; prereq. consent of instructor. (<i>Offered in Summer Session. Not offered in 1942-43</i>))				

ART EDUCATION

Major advisers.—Professor Ruth Raymond; Instructor Marie Lien.

GROUP A—DESIGN

Junior College Courses

ArtEd.1f-2w-3s¶	Fundamental Experiences in Design (9 cred.; prereq. high school art or 14-15-16)	I-II	MWF	207bJ	Miss Lien
ArtEd.14f-15w-16s	Introduction to Art Education (9 cred.; required of all entering Art Ed. as majors or minors; no prereq. Some lab. experience recommended)	I	TTh	104J	Mr. Torbert
	Lect.	I	TTh	104J	Mr. Torbert
	Tours	VII-VIII	W or ar		

† A fee of \$1 per credit is charged for this course.

¶ Each term gives some craft experience for which 1 credit may be allowed toward requirement in Group B.

No.	Title	Hour	Day	Bldg.	Instructor
ArtEd.14Af-15Aw-16As	Introduction to Art Education Laboratory (6 cred.; required in addition to 14-15-16 of those without high school art; no prereq.)				
	Sec. 1	III-IV	T	203J	Mr. Torbert
		III	Th		and ar
	2	I-II	MW	203J	
	3	I-II	WF	207bJ	
ArtEd.17f-18w-19s	Art for Elementary Teachers (9 cred.; for nonmajors preparing to teach in preschool and elementary grades; no prereq.)				
	Lect.	IV	T	200J	Mr. Gayne
	Sec. 1	I-II	TTh	203J	Mr. Gayne
	2	VI-VII	M	203J	Mr. Gayne
ArtEd.20f-21w-22s	Fundamental Experiences in Design—Continued (9 cred.; prereq. ArtEd. 1-2-3 or permission)				
		III-IV	MWF	203J	Miss Berglund

Senior College and Graduate Courses

ArtEd.52A	<i>Design in Present-Day Home Equipment</i> (2 cred.; jr., sr.) (<i>Not offered in 1942-43</i>)				
ArtEd.54f-55w-56s	Fundamental Experiences in Art (6 cred.; for nonmajors; prereq. permission of instructor)				
		Ar in I	TTh	104J	Mr. Torbert
ArtEd.70f-71w-72s	Fundamental Experiences in Design—Continued—Color emphasis (9 cred.; same as 20-21-22 but held to Senior College level; prereq. 1-2-3 or equiv. or evidence of fitness)				
		III-IV	MWF	203J	Miss Berglund
ArtEd.150E-151E	<i>Understanding Contemporary Design</i> (3 cred.; sr., grad.; prereq. Fine Arts 1 or evidence of fitness) (<i>Not offered in 1942-43</i>)				
ArtEd.152	<i>Landscape Design</i> (<i>Not offered</i>)				
ArtEd.153w-154f-155Es	Art in Society				
154f	Development of Personality and Its Expression in Costume (3 cred.; sr., grad.)	4:00-5:00	WF	203J	Miss Raymond
			M	optional	
153w	The Modern Scandinavian Home As an Expression of Northern Art (3 cred.; sr., grad.)	4:00-6:00	Th	203J	Miss Lien
155Es	The Plastic Arts (painting emphasized). Students expecting to register in 155 should consult Mr. Torbert about prerequisite reading (3 cred.; sr., grad.)	4:00-6:00	T	203J	Mr. Torbert

GROUP B—HANDCRAFTS

At the Senior College level each art major should choose one or two materials with which he should acquire expert skill and with whose possibilities in terms of both handcraft and productive industry he should be familiar. Unless otherwise stated the following courses in handcraft carry three credits.

Junior College Courses

Contacts with materials and hand-processes, primarily for nonmajors. Lectures and demonstrations in handcraft for public school, social work, summer camps, etc.

ArtEd.31f,w	Orientation in Handcraft Processes (3 cred.; no prereq.)				
		I-II	TThS	10J	Miss Ross

COLLEGE OF EDUCATION

Senior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
ArtEd.73f,w‡	Ceramic Materials and Processes				
	Lect. and dem. Sec. 1	VII	M	10J	Miss Ross
	2	VI	T	10J	Miss Ross
	Lab. ar. in	V-VIII	MTThF	10J	Miss Ross
ArtEd.74,75w‡	Ceramic Processes				
	Lect. and dem. Sec. 1	VII	F	10J	Miss Ross
	2	VI	Th	10J	Miss Ross
	Lab. ar. in	V-VIII	MTThF	10J	Miss Ross
ArtEd.75Bs‡	Bookbinding Process (Schedule same as for Art Ed. 73)			10J	Miss Ross
ArtEd.75Ms‡	Metal Work (Schedule same as for Art Ed. 74, 75)			10J	Miss Ross
ArtEd.76f‡	Textile Materials and Processes				
	Lect. and dem.	VI	MF	11J	Miss Berglund
	Lab.	VII and VI-VII	MF W	11J 11J	Miss Berglund Miss Berglund
ArtEd.77w‡	Textile Processes, Advanced				
	Lect.	VI	MF	11J	Miss Berglund
	Lab.	VII and VI-VII	MF W	11J 11J	Miss Berglund Miss Berglund
ArtEd.78s‡	Textile Processes				
	Sec. 1 Printing processes	VI-VII-VIII	MF	11J	Miss Berglund
	2 Weaving processes ar. if demanded				
ArtEd.81Af-Bw	Techniques of Puppetry (2 cred. a qtr.; prereq. consult major adviser)	III-IV	S	203J	Mrs. Meader

GROUP C—REPRESENTATION

Junior College Courses

ArtEd.4f,w,s-6f,w,s-8f,w,s	Drawing from Still Life and Pose (2 cred. a qtr.; no prereq.)				
	Sec. 1	I-II	MF	207aJ	Ar
	2	V-VI	MF	207aJ	Miss Lutz
	3	VII-VIII	MF	207J	Ar
	4	Ar	Ar	207J	Ar
ArtEd.10-11-12	<i>Experiences with Rhythms and Color (Not offered as a separate course in 1942-43)</i>				
ArtEd.23f,w	Composition Clinic (2 cred.; prereq. evidence of fitness)	I-II	S	207J	Mr. Torbert
ArtEd.24f,w,s-26f,w,s-28f,w,s	Drawing and Painting from Still Life and Pose (Continuation of 4-6-8) (2 cred. each)				
	Sec. 1	I-II	TTh	207aJ	Miss Lutz
	2	III-IV	MF	207aJ	Ar
	3	VI-VII	TTh	207aJ	Ar
ArtEd.29-30	<i>Rhythmic Sketch—Simple use of figure (1 cred. a qtr.; no prereq.) (Not offered)</i>				

Senior College Courses

ArtEd.61,62,63f,w,s	Painting (2 cred. each)				
	Sec. 1	VI-VII	TTh	207aJ	Miss Lutz
	2	I-IV	S	207aJ	Miss Lutz
ArtEd.66,67,68f,w,s	Painting (Continuation of 61, 62, 63)	I-IV	S	207J	Miss Lutz
	Advanced Painting (2 to 6 cred.)	I-IV	S	Ar	Miss Lutz

‡ A fee of \$1.50 per quarter is charged for this course.

GROUP D—APPRECIATION

For History of Art see offerings in Fine Arts

Senior College and Graduate Courses

No.	Title	Hour	Day	Bldg.	Instructor
ArtEd.57-58	Art and Leisure—Participation in cultural advantages of Twin City galleries and auditoriums (1 cred. each) (Not offered as a separate course in 1942-43) (See Fine Arts 1, G.C. 119-120-121)				
ArtEd.153w-154f-155Es	Art in Society (See Group A)				

GROUP E—PROFESSIONAL COURSES

Senior College and Graduate Courses

ArtEd.84s‡	Teaching of Art in the Elementary Grades (3 cred.; prereq. Ed. 61A-B-C or equiv.)	VII 1 hr. ar.	TTh	203aJ	Mr. Gayne
ArtEd.86f-87w-88s‡‡	Special Methods and Directed Teaching in Art (12 cred.; prereq. Ed. 51A-B-C or equiv.)	III	TTh	Art Lab.	WeH Miss Fisher
ArtEd.183Es	Teaching Philosophy of Art Education (3 cred.; sr., grad.)	VI-VII and 1 hr. ar. 4:00-5:00	MWF	203J	Pub. Sch. Miss Raymond
ArtEd.185s	Types of Art Instruction II (3 cred.; sr., grad.)	4:00-6:00	Th	203J	Miss Lien
ArtEd.189w	Application of Esthetic Theory to Public Education (3 cred.; sr., grad.)	4:00-5:00	WF	203J	Miss Raymond
ArtEd.284Ef,w,s	Reading and Research in Art Education (3 cred.; grad.)	5:00-6:00	F		M optional Miss Lien and staff
ArtEd.290E, 291E,292Ef,w,s	Special Problems in Art Education—Tutorials	Ar	Ar	Ar	Miss Raymond, Miss Lien, and others
ArtEd.295f,w,s*	Special Problems in Art Education	Ar	Ar	Ar	Miss Lien

CURRICULUM AND INSTRUCTION

Major advisers.—Professors Boardman, Bossing, Brueckner, Johnson, Dora V. Smith, and Wesley; Associate Professors Bond and Cook.

All courses under *Curriculum and Instruction* except seminar courses, carry a fee of \$1 per credit.

GENERAL COURSES

Ed.C.I.70s‡	Methods and Materials in Safety Education (3 cred.)	VIII	MWF	215CH	Mr. Piper
Ed.C.I.104f‡	Adult Education (2 cred.; jr., sr., grad.)	III-IV	S	301Lib	Mr. Dickerman
Ed.C.I.105s‡	Visual Aids in Teaching (2 cred.; jr., sr., grad.)	III-IV	S	106Pt	Mr. Wendt

* This course may be taken for independent study under Plan B for the Master's degree.

‡ A fee of \$1 per credit is charged for this course.

‡ Passing the qualifying examination in English and a C+ average (1.5 honor points per credit) in the major or the subject in which student teaching is done are prerequisite to registration in this course.

COLLEGE OF EDUCATION

No.	Title	Hour	Day	Bldg.	Instructor
Ed.C.I.107f‡	Radio in Education (3 cred.; jr., sr., grad.; prereq. 9 cred. in ed.)	IX-X, 1 hr. ar.	Th	302MurH	Mr. Tyler
Ed.C.I.107s‡	Radio in Education (3 cred.; jr., sr., grad.; prereq. 9 cred. in ed.)	IV	MWF	302MurH	Mr. Tyler
Ed.C.I.114‡	<i>Methods and Materials in the Field of Adult Education</i> (2 cred.; jr., sr., grad.; <i>(Not offered)</i>)				
Ed.C.I.145s‡	Remedial Reading (3 cred.; prereq. Ed.C.I. 143 or 144 or 159)	4:30-6:30	W	100Pt	Mr. Bond
Ed.C.I.171f,w,s‡	Curriculum Laboratory Practice—A course in the analysis and construction of units, courses of study, and curricula; class projects and individual projects according to needs, interests, level, and specialization. A special section will be organized for the winter quarter devoted to community resources available within the Twin Cities for curriculum development. Class discussions, survey, field trips. (2 to 6 cred.; sr., grad.; prereq. 170 or consent of instructor)	Ar (f,s)	Ar Ar		Mr. Bossing, Mr. Cook
		III-IV(w)	S Ar		Mr. Bossing, Mr. Brameld, Mr. Cook, and others
Ed.C.I.174f-175w-176s‡‡	Clinical Methods and Practice in Speech Pathology (9 cred.; sr., grad.; prereq. Sp. 1, 2, 3, 61, 67, 162; Psy. 4-5; Zool. 83 or Psy. 52; Ed.Psy. 60; Human Physiol. 2; Human Anat. 3; and permission of instructor)	III	TTh	406F	Mr. Bryngelson, Mr. Brown, Mrs. Chapman
		other hrs. ar.			
Ed.C.I.207f,w,s*‡	Problems in Radio Education (1 to 6 cred. ar.)	Ar	Ar Ar		Mr. Tyler
Ed.C.I.271f,w,s*‡	Problems in Curriculum Construction (2 or 3 cred. a qtr. with a maximum of 6; prereq. completion or current enrolment in one of the following: Ed.C.I. 113 or 119 and 170 or consent of instructor)	Ar	Ar Ar		Mr. Bossing, Mr. Cook, Mr. Archer
Ed.C.I.273f,w,s*‡	Problems in Reading (2 to 6 cred.; prereq. previous training in reading such as Ed.C.I. 143 or 144 or equiv.)	Ar	Ar Ar		Mr. Bond

ELEMENTARY EDUCATION

Ed.C.I.60f‡	The Teaching of Reading in the Elementary School (3 cred.; sr.; prereq. Ed. 61A-B)	VI	MWF	100Pt	Mr. Bond
Ed.C.I.61s‡	Teaching the Social Studies in the Elementary School (2 cred.; jr.; prereq. Ed. 61A-B)	VI	TTh	209Bu	Mr. Wesley
Ed.C.I.62f‡	The Teaching of Primary Grade Arithmetic (2 cred.; sr.; prereq. Ed. 61A-B)	VI	TTh	100Pt	Mr. Brueckner
Ed.C.I.63Tf‡	Children's Literature (2 cred.; for teachers in service)	III-IV	S	206UHS	Miss Smith
Ed.C.I.63w‡	Children's Literature (2 cred.; sr.; prereq. Ed. 61A-B)	VI	TTh	106Pt	Miss Smith
Ed.C.I.64w‡	The Teaching of English in the Elementary School (3 cred.; sr.; prereq. Ed. 61A-B)	VI	MWF	100Pt	Mr. Archer

* This course may be taken for independent study under Plan B for the Master's degree.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per credit is charged for this course.

§ Passing the qualifying examination in English and a C+ average (1.5 honor points per credit) in the major or the subject in which student teaching is done are prerequisite to registration in this course.

No.	Title	Hour	Day	Bldg.	Instructor
Ed.C.I.65w,s‡	The Teaching of Science in the Elementary School (3 cred.; jr., sr.; prereq. Ed. 61A-B)				
	Winter for seniors	VI	MWF	106Pt	Ar
	Spring for juniors	VI	MWF	100Pt	Ar
Ed.C.I.119f‡	Elementary School Curriculum (3 cred.; sr., grad.; prereq. Ed.C.I. 61C or equiv.)	III-IV		S 115UHS	Mr. Cook
Ed.C.I.119T-120T‡	<i>Elementary School Curriculum</i> (4 cred. See 119) (<i>Not offered</i>)				
Ed.C.I.130s‡	Problems in Childhood Education (2 cred.; sr., grad.; prereq. 9 cred. in ed. including Ed.T. 55 or equiv.)				
		I-II		S 202Pt	Miss Mechem
Ed.C.I.143w‡	Teaching of Reading in the Elementary School (3 cred.; jr., sr., grad.; prereq. 9 hrs. in ed. including Ed. 51A or 61A)				
		4:30-6:30		W 100Pt	Mr. Bond
Ed.C.I.144w‡	Teaching of Reading in the Upper Grades and Junior and Senior High Schools (2 cred.; sr., grad.; prereq. same as for 143)				
		I	TTh	100Pt	Mr. Bond
Ed.C.I.146‡	<i>Current Developments in Language Expression in the Elementary School</i> (2 cred.; jr., sr., grad.; prereq. Ed. 61A-B-C or equiv. Not open to students who have had Ed.C.I. 64) (<i>Not offered</i>)				
Ed.C.I.148s‡	The Teaching of Primary Arithmetic (2 cred.; sr., grad.; prereq. Ed. 61A-B-C, or equiv. Not open to students who have had Ed.C.I. 62)	IX-X		M 210Bu	Mr. Brueckner
Ed.C.I.149f‡	The Teaching of Intermediate Grade Arithmetic (2 cred.; sr., grad.; prereq. Ed. 61A-B-C or equiv.)	IX-X		T 210Bu	Mr. Brueckner
Ed.C.I.150f‡	Supervision and Improvement of Instruction (3 cred.; sr., grad.; prereq. Ed. 61C or equiv.)				
		I-II and 1 hr. ar.		S 204bUHS	Mr. Brueckner
Ed.C.I.151w‡	Diagnosis and Remedial Instruction (3 cred.; sr., grad.; prereq. Ed.C.I. 150 or equiv.)				
		I-II		S 204bUHS	Mr. Brueckner
Ed.C.I.152‡	<i>The Adjustment of Schools to Individual Differences</i> (2 cred.; sr., grad.; prereq. 15 hrs. in ed.) (<i>Not offered</i>)				
Ed.C.I.153s‡	Supervision and Teaching of English in the Elementary Schools (2 cred.; sr., grad.; prereq. Ed. 61A-B-C, or equiv.)				
		I-II		S 204aUHS	Mr. Archer
Ed.C.I.156s‡	Practice Supervision—Group Problems and Field Work (3 cred.; sr., grad.; prereq. 15 hrs. in ed. and permission of instructor)				
		I-IV	TTh	Ar	Mr. Brueckner
				Dem. schools,	
				Twin City schools	
Ed.C.I.157f,w,s‡	Practice in Supervision (3 cred. a qtr.; sr., grad.; prereq. consent of instructor)				
		Ar	Ar	Ar	Mr. Brueckner
Ed.C.I.160s‡	Supervision of Elementary Subjects (3 cred.; sr., grad.; prereq. Ed.C.I. 150 or equiv.)				
		IX-X		T 204bUHS	Mr. Brueckner,
		and 1 hr. ar.			Miss Smith,
					Mr. Wesley,
					Mr. Bond
Ed.C.I.170Aw‡	Curriculum and Course of Study Construction—A study of the principles and methods for the selection and organization of units, courses of study, and curricula at the elementary school level (3 cred.; sr., grad.; prereq. 119 or consent of instructor)				
		IX-X		M 115UHS	Mr. Cook
		and 1 hr. ar.			
Ed.C.I.173As‡	Organizing Units of Instruction in the Elementary School—A consideration of the principles and procedures involved in the organization of centers of interest units utilizing natural and social studies in the development of language skills, number skills, study skills, and social behavior. (2 cred.; sr., grad.; prereq. 119 or teaching experience)				
		IX-X		M 115UHS	Mr. Cook

‡ A fee of \$1 per credit is charged for this course.

COLLEGE OF EDUCATION

No.	Title	Hour	Day	Bldg.	Instructor
Ed.C.I.181s‡	Foundations of Elementary School Methods (3 cred.; sr., grad.; prereq. 9 hrs. in ed.)				
		II	MWF	210Bu	Mr. Brueckner
Ed.C.I.181T-182T‡	<i>Foundations of Elementary School Methods</i> (See 181 above) (<i>Not offered</i>)				
Ed.C.I.190w‡	Principles of Selection of Materials for Reading in the Elementary School (2 cred.; sr., grad.; prereq. 63 or 122 or equiv.)				
		IX-X	M	204aUHS	Miss Smith
Ed.C.I.226f-227w-228s	Seminar in Elementary School Problems				
		IX-X	Th	209Bu	Mr. Brueckner, Mr. Bond, Mr. Cook, Mr. Archer
Ed.C.I.255w*‡	Supervision and Teaching of Arithmetic (2 cred.; prereq. 62 or 148 or 149 or equiv.)				
		IX-X	T	204aUHS	Mr. Brueckner
Ed.C.I.259w*‡	Supervision and Teaching of Reading (2 cred.)				
		I-II	S	115UHS	Mr. Bond
Ed.C.I.261f,w,s*‡	Special Problems in School Supervision (2 cred.; prereq. 10 hrs. in ed. including Ed. 51A)				
		Ar	Ar	220Bu	Mr. Brueckner
Ed.C.I.263f*‡	Research in Arithmetic Instruction (2 cred.; prereq. Ed.C.I. 156 or .148 or 149 or equiv.)				
		III-IV	S	204bUHS	Mr. Brueckner
Ed.C.I.264s*‡	Research in Educational Diagnosis (2 cred.; prereq. Ed.C.I. 151 or equiv.)				
		I-II	S	204aUHS	Mr. Brueckner, Mr. Bond
Ed.C.I.265*‡	<i>Recent Literature in Supervision</i> (2 cred.) (<i>Not offered</i>)				

SECONDARY EDUCATION

Ed.C.I.113f‡	High School Curriculum (4 cred.; sr., grad.; prereq. 10 hrs. in ed. including Ed. 51A-B-C)				
		IX-X	MW	209Bu	Mr. Bossing
Ed.C.I.113w‡	High School Curriculum (3 cred.; see above)				
		I-II and 1 hr. ar.	S	204aUHS	Mr. Bossing
Ed.C.I.122s‡	Literature for Adolescents (2 cred.; jr., sr., grad.; prereq. Ed. 51C or junior-senior teaching experience)				
		I-II	S	117UHS	Miss Smith
Ed.C.I.135w‡	Teaching of Occupations and Group Guidance (2 cred.; sr., grad.; prereq. 9 hrs. in ed.)				
		III-IV	S	106Pt	Miss Edwards, Miss Wright
Ed.C.I.144w‡	Teaching of Reading in the Upper Grades and Junior and Senior High Schools (2 cred.; sr., grad.; prereq. 9 hrs. in ed. including Ed. 51A)				
		I	TTh	100Pt	Mr. Bond
Ed.C.I.168f‡	Current Developments in the Social Studies (2 cred.; grad. only)				
		III-IV	S	204aUHS	Mr. Wesley
Ed.C.I.169w‡	Extracurricular Activities (2 cred.; prereq. 10 hrs. in ed. including Ed. 51A)				
		III	TTh	106Pt	Mr. Bossing
Ed.C.I.170Bw‡	Curriculum and Course of Study Construction—A study of the principles and methods for the selection and organization of units, courses of study, and curricula at the secondary school level. (3 cred.; sr., grad.; prereq. 113 and 170, or consent of instructor)				
		IX-X and 1 hr. ar.	M	209Bu	Mr. Bossing
Ed.C.I.173Bs‡	Organizing Units of Instruction in the Secondary School (2 cred.; sr., grad.; prereq. 113 or consent of instructor)				
		IX-X	M	204aUHS	Mr. Bossing
Ed.C.I.188‡	<i>Advanced Course in Methods of Teaching Modern Languages</i> (2 cred.; sr., grad.; prereq. Ed.T. 72A-B-C, or experience in teaching the modern languages) (<i>Not offered</i>)				

* This course may be taken for independent study under Plan B for the Master's degree.

‡ A fee of \$1 per credit is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
Ed.C.I.191s†	Advanced Course in the Teaching and Supervision of Secondary School Mathematics (2 cred.; prereq. Ed. 51C or permission of instructor)	I-II	S	115UHS	Mr. Walker
Ed.C.I.198s†	Recent Literature in Methods and Curriculum in English (2 cred.; sr., grad.; prereq. Ed.T. 66A-B-C, or equiv.) (Students should not register for this course in the same year with Ed.C.I. 294)	IX-X	M	206UHS	Miss Smith
Ed.C.I.199Ef,w,s†	Internship (Cred. ar.; grad.)	Ar	Ar	Ar	Mr. Anderson
Ed.C.I.201f-202w-203s*†	Problems in Teaching the Social Studies (3 cred. a qtr.; grad.; prereq. consent of instructor)	4:00	T	226Bu	Mr. Wesley
Ed.C.I.204†	<i>Social Studies Curriculum</i> (2 cred.) (Not offered)				
Ed.C.I.222f-223w-224s	Seminar—Current Problems in Technique of High School Instruction (With or without credit; prereq. Ed. 51C and Ed.C.I. 113)	IX-X	Th	204bUHS	Mr. Bossing, Mr. Johnson, Miss Smith, Mr. Wesley
Ed.C.I.225f,w,s*†	Special Problems in Supervision of Instruction in Secondary Schools (Cred. ar.)	Ar	Ar	218Bu	Mr. Boardman
Ed.C.I.254s†	Supervision of the Social Studies (2 cred.; sr., grad.; prereq. Ed. 61A-B-C, or equiv.)	III-IV	S	206UHS	Mr. Wesley
Ed.C.I.266s†	Supervision of High School Instruction (3 cred. This course is part of a three-quarter sequence. For fall and winter courses see Ed.Ad. 264-265. Students may register for any quarter.)	III-IV 1 hr. ar.	S	204bUHS	Mr. Boardman
Ed.C.I.287f†	Advanced Course in the Teaching of Science (2 cred.; sr., grad.; prereq. Ed. 51C)	III-IV	S	202UHS	Mr. Johnson
Ed.C.I.293s*†	Foundations of Secondary School Methods (3 cred.)	IX-X and 1 hr. ar.	T	202UHS	Mr. Johnson
Ed.C.I.294f*†	Advanced Course in Methods of Teaching English (2 cred.; prereq. Ed.T. 66A-B-C or equiv.)	IX-X	M	204aUHS	Miss Smith
Ed.C.I.296w-297s*†	Special Problems in Techniques of Secondary School Instruction (Cred. ar.; grad.)	Ar	Ar	206Bu	Miss Smith

HIGHER EDUCATION

Ed.C.I.184w†	Supervision of Student Teaching (2 cred.; sr., grad.)	Ar	Ar	Ar	Mr. Anderson
Ed.C.I.228f-229w-230s*†	Problems of College Education (6 cred.)	Ar	Ar	Ar	Mr. McConnell, Miss Eckert
Ed.C.I.250f†	Higher Education in the United States—Curriculum and instruction (3 cred.; prereq. 15 hrs. in ed.)	I-II 1 hr. ar.	S	206UHS	Miss Eckert
Ed.C.I.285f†	Professional Education of Teachers (2 cred.; prereq. 15 hrs. in ed.)	III-IV	S	205bUHS	Mr. Peik
Ed.C.I.286f,w,s*†	Problems in Teacher Training (2 cred. a qtr.; prereq. 285 or permission of instructor)	Ar(f,s) III-IV(w)	Ar	Ar	Mr. Peik Mr. Peik
	(See also Ed.Ad. 287s. Instruction and Administration in Teacher Training Institutions.)				

* This course may be taken for independent study under Plan B for the Master's degree.

† A fee of \$1 per credit is charged for this course.

EDUCATIONAL ADMINISTRATION

Major advisers.—Professors Neale, Boardman, and Bossing.

GENERAL COURSES

No.	Title	Hour	Day	Bldg.	Instructor
Ed.Ad.124f	Public School Administration (3 cred.; sr., grad.; prereq. 10 hrs. in ed.)	IX	MWF	210Bu	Mr. Neale
Ed.Ad.125w	Techniques in Administration (3 cred.; sr., grad.; prereq. 124)	IX-X 1 hr. ar.	M	210Bu	Mr. Neale
Ed.Ad.144	<i>Organization and Administration of Adult Education in Public and Private Agencies</i> (2 cred.; sr.; prereq. consent of instructor) (<i>Not offered</i>)				
Ed.Ad.205	<i>Problems in Adult Education</i> (2 cred. a qtr.; open to graduate students and professional workers in the field with permission of instructor; prereq. Ed.Psy. 293-294, Ed.C.I. 114, Ed.Ad. 144) (<i>Not offered</i>)				
Ed.Ad.210s*	Financial Aspects of Public School Business Administration (3 cred.; prereq. 124, 125)	I-II 1 hr. ar.	S	111UHS	Mr. Neale
Ed.Ad.226s	School Plant Planning and Management (3 cred.; sr., grad.; prereq. 124, 125)	IX-X 1 hr. ar.	M	210Bu	Mr. Neale
Ed.Ad.228f,w,s*	Special Problems in Educational Administration (1 or 3 cred.; prereq. 124, 125)	Ar	Ar	224Bu	Mr. Neale
Ed.Ad.230f*	Public Relations for Schools (3 cred.; grad.)	I-II 1 hr. ar.	S	111UHS	Mr. Neale
Ed.Ad.235f-236w-237s	Seminar in Educational Administration	Ar	Ar	224Bu	Mr. Neale

ELEMENTARY EDUCATION

Ed.Ad.115w	Organization of the Elementary School (3 cred.; jr., sr., grad.; prereq. 10 hrs. in ed.)	III-IV 1 hr. ar.	S	111UHS	Mr. Neale
------------	--	---------------------	---	--------	-----------

SECONDARY EDUCATION

Ed.Ad.133f	Guidance in Secondary Schools (2 cred.; sr., grad.; prereq. 9 hrs. in ed.)	III-IV	S	106Pt	Miss Edwards, Miss Wright
Ed.Ad.167f	Junior High School (3 cred.; sr., grad.; prereq. 10 hrs. in ed. including Ed. 51)	I-II and 1 hr. ar.	S	100Pt	Mr. Bossing
Ed.Ad.218f-219w-220s	Recent Literature in Secondary Education (Cred. ar.)	IX-X	Th	204aUHS	Mr. Boardman, Mr. Bossing
Ed.Ad.264f-265w	High School Administration (3 cred. a qtr.; grad. For third quarter continuation of this course see Ed.C.I. 266. Students may register for any quarter.)	III-IV 1 hr. ar.	S	204bUHS	Mr. Boardman
Ed.Ad.270f,w,s*	Special Problems in Secondary Education (Cred. ar.; maximum 9 cred.)	Ar	Ar	218Bu	Mr. Boardman, Mr. Bossing
Ed.Ad.280f,w,‡	Practice in High School Administration (2 cred. a qtr.; sr., grad.; prereq. 264-265 or equiv. and consent of instructor)	Ar	Ar	218Bu	Mr. Boardman

HIGHER EDUCATION

Ed.Ad.253w	Administration in Higher Education (3 cred.; prereq. consent of instructor)	VII-VIII 1 hr. ar.	T	224Bu	Mr. Neale
------------	---	-----------------------	---	-------	-----------

* This course may be taken for independent study under Plan B for the Master's degree.

‡ A fee of \$1 per credit is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
Ed.Ad.287s	Instruction and Administration in Teacher Training Institutions (2 cred.; prereq. 15 hrs. in ed.)	I-II		S 205bUHS	Mr. Peik

EDUCATIONAL PSYCHOLOGY

Major advisers.—Professors Miller, Johnson, McConnell, and Wrenn; Associate Professors Bond, Cook, and Van Wagenen.

GENERAL COURSES

Ed.Psy.60f	Introduction to Statistical Methods (2 cred.; jr., sr.; prereq. 6 cred. in psy.)	I-II		S 106Pt	Mr. Fattu
Ed.Psy.60w,s	Introduction to Statistical Methods (3 cred.; see 60f)	II	MWF	106Pt	Mr. Fattu
Ed.Psy.116w-117s	Statistical Methods in Education (4 cred.; sr., grad.)	IX-X		T 115Psy	Mr. Van Wagenen
Ed.Psy.120f	Basic Principles of Measurement (3 cred.; sr., grad.; prereq. Ed.Psy. 60 or equiv.)	VII	MWF	106Pt	Mr. Cook
Ed.Psy.120s	Basic Principles of Measurement (3 cred. See 120f)	III-IV		S 115UHS	Mr. Cook
		1 hr. ar.			
Ed.Psy.133f	Guidance in Secondary Schools (2 cred.; sr., grad.; prereq. 9 hrs. in ed.)	III-IV		S 106Pt	Miss Edwards, Miss Wright
Ed.Psy.138-139†	<i>Experimental Educational Psychology</i> (4 cred.; sr., grad.; prereq. 51A or equiv.) (<i>Not offered</i>)				
Ed.Psy.140w	Tests and Measurements in Elementary and Secondary Education (3 cred.; sr., grad.; prereq. 120 or equiv.)	IX-X and VIII-IX		W 115Psy F	Mr. Cook
Ed.Psy.141w	Group Aptitude Testing (3 cred.; sr., grad.; prereq. 120 or equiv.)	VII	MWF	115Psy	Mr. Miller
Ed.Psy.142f	Individual Aptitude Testing (3 cred.; sr., grad.; prereq. 120 or equiv.)	IX-X		T 211Bu	Mr. Bond
Ed.Psy.143	<i>Individual Mental Testing Laboratory</i> (2 cred.; prereq. Ed.Psy. 142) (<i>Not offered</i>)				
Ed.Psy.150f,w	Psycho-educational Clinic (2 to 6 cred.; sr., grad.; permission of instructor; prereq. 120, 140 and 141 or 142)	V	W and ar.	Ar	Mr. Bond
Ed.Psy.159f	Personality Adjustments in Education (3 cred.; sr., grad.; prereq. 9 hrs. in ed. and psy. including one recent course in psy.)	II	MWF	115Psy	Mr. Wrenn
Ed.Psy.159s	Personality Adjustments in Education (2 cred.; see above)	4:00-5:30		T 115Psy	Mr. Wrenn
Ed.Psy.180	<i>Esthetics in Education</i> (2 cred.; sr., grad.; consent of instructor) (<i>Not offered</i>)				
Ed.Psy.189	<i>The Human Organism</i> (3 cred.; sr., grad.; prereq. permission of instructor) (<i>Not offered</i>)				
Ed..Psy.201f-202w-203s	Seminar in Educational Psychology	Ar		Ar 301Psy	Mr. Miller, Mr. Johnson, Mr. Wrenn, Miss Ed-wards, Mr. Bond, Mr. Cook, Mr. Van Wagenen

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

COLLEGE OF EDUCATION

No.	Title	Hour	Day	Bldg.	Instructor
Ed.Psy.208w*	Methods in Educational Research (2 cred.)	IX-X	M	206UHS	Mr. Johnson
Ed.Psy.216f-217w-218s	Statistical Methods in Education (3 cred. a qtr.; grad.)	II	MWF	109Psy	Mr. Johnson
Ed.Psy.225w*	Diagnosis and Counseling in a Student Personnel Program (3 cred.; prereq. Ed. 133 and Ed.Psy. 120 or equiv.)	I	MWF	301Psy	Mr. Wrenn
Ed.Psy.233f,w,s	Problems in Guidance and Personnel Work (Cred. ar.; prereq. consent of instructor)	VIII	W	113Psy	Mr. Wrenn, Miss Ed-wards
Ed.Psy.240f,w,s*	Problems in Measurement (2 cred. a qtr.)	Ar	Ar	Ar	Mr. Johnson
Ed.Psy.243f,w,s	Problems in Statistics for Students in Education and Psychology (With or without credit. Cred. ar.)	Ar	Ar	Ar	Mr. Johnson
Ed.Psy.253f,w,s*	Research Problems (Ar.; prereq. consult instructor) (See also Ed.Psy. 233 and Ed.Psy. 240)	Ar	Ar	Ar	Mr. Miller, Mr. Wrenn, Mr. Bond, Mr. Cook, Mr. Van Wagenen
Ed.Psy.281f,w,s	Practice in Personnel Work (2-3 cred. Maximum 9 cred.; prereq. Ed.Psy. 225, or to be taken concurrently, and consent of instructor)	Ar	Ar	Ar	Mr. Wrenn, Miss Edwards, Mr. Darley
Ed.Psy.290f-291w	Individual Differences (3 cred. a qtr.; prereq. Ed. 51A and 60 or equiv. and permission of instructor)	III	MWF	301Psy	Mr. Miller
Ed.Psy.292s*	Recent Literature in Educational Psychology (3 cred.; prereq. Ed. 51A and 60 or equiv. and permission of instructor)	III	MWF	301Psy	Mr. Miller
Ed.Psy.293w*	Psychology of Learning (3 cred. a qtr.; prereq. 12 cred. in psy. and ed. psy.)	IV	MWF	Ar	Mr. McConnell
Ed.Psy.294s*	Recent Theory and Research in Human Learning (3 cred. Consult instructor)	IV	MWF	Ar	Mr. McConnell
Ed.Psy.297-298-299	<i>Problems in Subnormality</i> (6 cred.; jr., sr., grad.) (<i>Not offered</i>)				

ELEMENTARY EDUCATION

Ed.Psy.113f-114w-115s	Psychology of Elementary School Subjects (2 cred. per qtr.; jr., sr., grad.; prereq. 10 cred. in psy. and ed.)	IX-X	W	109Psy	Mr. Van Wagenen
Ed.Psy.146-147†	<i>Child Guidance</i> (4 cred.; jr., sr., grad.; prereq. 15 cred. in psy. and ed.) (<i>Not offered</i>)				
Ed.Psy.157	<i>Psychology of Child Development</i> (2 cred.; jr., sr., grad.; prereq. 6 cred. in psy.) (<i>Not offered</i>) (See <i>Child Welfare</i> 130-131)				
Ed.Psy.182w	Education of Handicapped Children (2 cred.; jr., sr., grad.; prereq. Ed. 51A or 61A or equiv.)	III	TTh	100Pt	Mr. Bond
Ed.Psy.183f	Education of Gifted Children (2 cred.; jr., sr., grad.; prereq. Ed. 51A or equiv.)	III	TTh	106Pt	Mr. Bond

* This course may be taken for independent study under Plan B for the Master's degree.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

No.	Title	Hour	Day	Bldg.	Instructor
Ed.Psy.184s	Education of the Slow Learning Child (2 cred.; jr., sr., grad.; prereq. Ed. 51A or equiv.)	III	TTh	106Pt	Mr. Bond

SECONDARY EDUCATION

Ed.Psy.158s	Psychology of Adolescence (3 cred.; jr., sr., grad.; prereq. Ed. 51A or equiv.)	III	MWF	106Pt	Miss Edwards
Ed.Psy.182w	Education of Handicapped Children (See above)	III	TTh	100Pt	Mr. Bond
Ed.Psy.183f	Education of Gifted Children (See above)	III	TTh	106Pt	Mr. Bond

HIGHER EDUCATION

Ed.Psy.252s	Student Personnel Work in College and University (3 cred.; prereq. 250 or 251 or 253 or 254)	IV	MWF	109Psy	Mr. Wrenn
Ed.Psy.254s	Measurement and Evaluation in Higher Education (3 cred.; 15 hrs. in ed.)	I-II	S	114UHS	Mr. Johnson
		1 hr. ar.			

HISTORY AND PHILOSOPHY OF EDUCATION

Major advisers.—Professor Wesley; Associate Professor Brameld; Assistant Professor Jean H. Alexander.

GENERAL COURSES

H.Ed.71f,w,s	Brief Course in History of Education (5 cred.; jr., sr.; prereq. 6 cred. in psy.)	IV	MTWFS	210Bu	Miss Alexander
H.Ed.73s	Educational Sociology (3 cred.; jr., sr.; prereq. 6 cred. in psy.)	III	MWF	100Pt	Mr. Wesley, Mr. Brameld, and others
H.Ed.74w	Social Viewpoints in Education.—An introductory survey and interpretation of the role of the schools in American society, especially in terms of the more challenging educational theories (3 cred.; soph., jr., sr.; no prereq.)	III	MWF	101Ag	Farm campus Mr. Brameld
H.Ed.75	<i>Public Education in the United States</i> (3 cred.; jr., sr.; prereq. 6 cred. in psy.) (Not offered)				
H.Ed.76f	Introduction to Philosophy of Education (3 cred.; jr., sr.; prereq. 6 hrs. in psy. Not open to students who have taken 176)	III	MWF	106Pt	Mr. Brameld
H.Ed.101f	Historical Foundations of Modern Education (3 cred.; jr., sr., grad.; prereq. 6 cred. in psy.)	VI	MWF	210Bu	Miss Alexander
H.Ed.102w	History of Modern Secondary and Higher Education (3 cred.; jr., sr., grad.; prereq. 6 cred. in psy.)	VI	MWF	210Bu	Miss Alexander
H.Ed.103s	History of Modern Elementary Education (3 cred.; jr., sr., grad.; prereq. 6 cred. in psy. Not open to students who have had H.Ed. 71)	VI	MF	210Bu	Miss Alexander
		1 hr. ar.			
H.Ed.129-130	<i>Educational Classics</i> (3 cred.; jr., sr., grad.; prereq. 6 cred. in psy.) (Not offered)				
H.Ed.131	<i>Comparative School Systems</i> (3 cred.; prereq. 9 cred. in ed.) (Not offered)				
H.Ed.162	<i>Significance of Progressive Education</i> (2 cred.; sr., grad.) (Not offered)				
H.Ed.176w	Conflicting Issues in Modern Education (2 cred.; jr., sr., grad.; not open to students who have taken 76; prereq. 6 hrs. in psy.)	IX-X	M	204aUHS	Mr. Brameld
H.Ed.177	<i>Philosophic Foundations of Modern Education</i> (3 cred.; jr., sr., grad.; prereq. 76 or 176) (Not offered)				

COLLEGE OF EDUCATION

No.	Title	Hour	Day	Bldg.	Instructor
H.Ed.178f	Education and Problems of American Democracy (3 cred.; jr., sr., grad.; prereq. 6 cred. in soc. sci.)	III-IV and 1 hr. ar.	S	100Pt	Mr. Brameld
H.Ed.179f	Critical Thinking for Teachers (3 cred.; jr., sr., grad.; prereq. 6 cred. in psy.)	II	MWF	210Bu	Mr. Brameld
H.Ed.180	<i>The School and the Social Order</i> (2 cred.; jr., sr., grad.; prereq. 12 cred. in soc. sci.) (<i>Not offered</i>)				
H.Ed.181s	Tutorial Work in Educational Sociology and Philosophy (3 cred.; jr., sr., grad.; prereq. 2 cred. from the following: 73, 74, 76, 176, 177, 178, 179, 180)	VI	MWF	106Pt	Mr. Brameld
H.Ed.231	<i>Problems in Comparative Education</i> (Cred. ar.) (<i>Not offered</i>)				
H.Ed.241f- 242w-243s*	Problems in the History of Education (2 cred. a qtr.; prereq. permission of instructor)	IX-X	M	226Bu	Mr. Wesley
H.Ed.276f,w,s*	Problems in Educational Philosophy and Sociology (Cred. ar.; consult instructor)	Ar	Ar	Ar	Mr. Brameld

ELEMENTARY EDUCATION

H.Ed.103s	History of Modern Elementary Education (3 cred.; jr., sr., grad.; prereq. 6 cred. in psy. Not open to students who have had H.Ed. 71)	VI	MF	210Bu	Miss Alexander
		and 1 hr. ar.			

SECONDARY EDUCATION

H.Ed.102w	History of Modern Secondary and Higher Education (3 cred.; jr., sr., grad.; prereq. 6 cred. in psy.)	VI	MWF	210Bu	Miss Alexander
-----------	--	----	-----	-------	----------------

HOME ECONOMICS EDUCATION

Major advisers.—Professors Wylle B. McNeal and Clara M. Brown; Assistant Professor Ella J. Rose.

Note.—Courses in Home Economics are open to all students in the College of Education who have satisfied the prerequisites or by permission of the chief of the division. For program of courses see page 152.

H.E.Ed.90f	Child Training (3 cred.; soph., jr., sr.; prereq. Psy. 1-2) (See also schedule for C.W. 40, p. 33)	IV	MWF	213HE(f) 313HE(s)	Miss Mechem
H.E.Ed.90w	Child Training (Same as 90f,s)	IV and 1 hr. ar.	MW	106Pt	Miss Mechem
H.E.Ed.91f,w,‡§	Observation, Materials, Teaching in Home Economics (5 cred.; jr., sr.; prereq. H.E. 4, 34 [or 170], 41, 50, 55, Psy. 1-2, Ed. 51A, 51C, parallel H.E.Ed. 93 and 192; home experience**)	VI	MTWThF	114HE	Miss Rose
		II-III	Th	Ar	Miss Kafka
H.E.Ed.92w,s	Teaching Problems in Home Economics (2 cred.; sr.; prereq. parallel H.E.Ed. 94)	VII	TTh	114HE	Miss Rose, Miss Kafka

* This course may be taken for independent study under Plan B for the Master's degree.

‡ A fee of \$1 per credit is charged for this course.

§ Passing the qualifying examination in English and a C+ average (1.5 honor points per credit) in the major are prerequisite to registration in this course.

** Plans for the home experience prerequisite for H.E.Ed. 91 and 93 will be made in conferences for first quarter juniors on Tuesdays IV hour, in Room 114 H.E. with Miss Inman.

No.	Title	Hour	Day	Bldg.	Instructor
H.E.Ed.93f,w,†‡¶	Supervised Teaching in Home Economics (3 cred.; jr., sr.; prereq. H.E. 4, 34 [or 170], 41, 50, 55, Psy. 1-2, Ed. 51A, 51C, parallel H.E.Ed. 91; home experience**)	Ar 3 consecutive hrs. daily between 8:15 and 3:00 and 1 hr. ar.	Ar	Ar	Miss Rose and others
H.E.Ed.94w,s,¶	Supervised Teaching in Home Economics (3 cred.; sr.; prereq. H.E.Ed. 91, 93, and 192, parallel H.E.Ed. 92)	Ar 3 consecutive hrs. daily between 8:15 and 3:00 and 1 hr. ar.	Ar	Ar	Miss Rose and others
H.E.Ed.192f	Evaluation in Home Economics (3 cred.; sr., grad.; prereq. Ed. 51A or equiv.)	Ar	Ar	Ar	Miss Brown
H.E.Ed.192f,w	Evaluation in Home Economics (2 cred.; sr., grad.; prereq. Ed. 51A or equiv., parallel H.E.Ed. 91 and 93)	VIII	TTh	213HE	Miss Clara Brown, Miss Rose
H.E.Ed.193f,w,s	Home Economics Curriculum (2 or 3 cred.; sr., grad.; prereq. or parallel H.E.Ed. 94 or permission of instructor)	Ar	Ar	Ar	Miss Clara Brown, Miss Rose
H.E.Ed.194af	Adult Education Problems (3 cred.; sr., grad.; prereq. H.E.Ed. 91, 93 or parallel)	V	MWF	114HE	Miss Krost
H.E.Ed.194bs	Adult Education Problems (3 cred.; sr.; prereq. same as for 194a)	VIII II-III	TTh S	114HE	Miss Krost
H.E.Ed.197f,w,s,†	Organization and Methods for Related Art Teaching (1 to 3 cred.; sr.; prereq. H.E.Ed. 91; H.E. 180 or parallel)	Ar	Ar	Ar	Miss H. Gold- stein
H.E.Ed.199Ef,w,s	Internship (Cred. ar.; grad.)	Ar	Ar	Ar	Miss Rose
H.E.Ed.243f,w,s	Trends in Home Economics (3 cred.)	Ar	Ar	Ar	Miss Rose
H.E.Ed.292s*	Problems in Evaluation (3 cred.; prereq. H.E.Ed. 192)	Ar	Ar	Ar	Miss Clara Brown
H.E.Ed.293f,w,s*	Special Studies in Home Economics Education (1 to 3 cred.; prereq. permission of instructor)	Ar	Ar	Ar	Miss Clara Brown, Miss Rose
H.E.Ed.294w,s*	Research Problems (1 to 5 cred.; prereq. permission of instructor)	Ar	Ar	Ar	Miss Clara Brown, Miss Rose
H.E.Ed.295f,w,s*	Current Problems (1 to 3 cred.)	Ar	Ar	Ar	Miss McNeal, Miss Clara Brown, Miss Rose

* This course may be taken for independent study under Plan B for the Master's degree.

† A fee of \$1 per credit is charged for this course.

¶ A grade of at least C is required in the following courses: H.E. 3, 4, 21, 22, 34 or (170), 40, 41, 55.

** Plans for the home experience prerequisite for H.E.Ed. 91 and 93 will be made in conferences for first quarter juniors on Tuesdays IV hour, in Room 114 H.E. with Miss Inman.

COLLEGE OF EDUCATION

INDUSTRIAL EDUCATION

Major advisers.—Professor Homer J. Smith; Associate Professor Fryklund.

No.	Title	Hour	Day	Bldg.	Instructor
Ind.11f,w,s,†‡	Special-Class Woodwork (2 cred.; no prereq.; not open to those who have credit in bench woodwork or cabinet making; for teachers of art, subnormal and elementary grade work) (Limited to 24)	I-IV		S 6Pt	
Ind.30f	Graphic Presentation (3 cred.; no prereq.)	IV	MWF	Ar	Mr. Smith
Ind.40f	Analysis (2 cred.; no prereq.)	IX-X	T	202EdH	Mr. Fryklund
Ind.42w	Course Organization (2 cred.; prereq. Ind. 40)	IX-X	Th	202EdH	Mr. Fryklund
Ind.44s	Equipment and Management (2 cred.; prereq. Ind. 40, 42)	IX-X	M	202EdH	Mr. Widdowson
Ind.50Af-50Bw-50Cs†‡	Directed Teaching (6 cred.; sr.; prereq. Ind. 70 or 75, and 80)	Ar	Ar	6Pt	Mr. Larson
Ind.60f	Philosophy of Vocational Education (2 cred.; no prereq.)	IX-X	M	202EdH	Mr. Widdowson
Ind.61w	Practices in Vocational Education (2 cred.; prereq. Ind. 60)	IX-X	M	202EdH	Mr. Widdowson
Ind.65‡	<i>Non-vocational Subjects (Not offered)</i>				
Ind.66w	Related Subjects (2 cred.; prereq. Ind. 40, 42)	IX-X	W	202EdH	Mr. Smith
Ind.70f‡	Methods in Shop Subjects (2 cred.; prereq. Ind. 40, 42)	IX-X	Th	202EdH	Mr. Smith
Ind.75w‡	Methods in Drawing (2 cred.; prereq. 10 cred. in drawing or consent of instructor. Not a course in drawing)	IX-X	T	202EdH	Mr. Fryklund
Ind.80f	General Industrial Training (2 cred.; no prereq.) (Not a shop course)	IX-X	W	202EdH	Mr. Larson
Ind.101f	Tests in Industrial Subjects (3 cred.; prereq. Ed. 51A)	III-IV	S	202EdH	Mr. Fryklund
Ind.102w‡	The General Shop (2 cred.; jr., sr.; prereq. Ind. 80. Not a shop course)	III-IV	S	202EdH	Mr. Fryklund
Ind.103s‡	Instructional Aids (3 cred.; sr., grad.; prereq. Ind. 40, 42)	III-IV	S	202EdH	Mr. Fryklund
Ind.104f‡	Defense Training (2 cred.; no prereq.; jr., sr., grad.) Not a part of the four-year curriculum; may be used in substitution for certain courses. Purposes, plans, practices of defense training. Laws, rulings, contracts, reimbursements, records. The Minnesota program, state and national data, current policies and difficulties.	IX-X	T	209EdH	Mr. Widdowson
Ind.105w‡	Industrial Education (3 cred.; jr., sr., grad.)	IX-X and 1 hr. ar.	F	202EdH	Mr. Smith
Ind.107w‡	Co-ordination (2 cred.; jr., sr., grad.; prereq. Ind. 60, 61 or 105 or consent of instructor)	IX-X	T	209EdH	Mr. Widdowson
Ind.108s‡	Apprenticeship (2 cred.; jr., sr., grad.; prereq. same as for 107)	IX-X	T	202EdH	Mr. Widdowson
Ind.110s	Guidance in the Schools (3 cred.; jr., sr., grad.; prereq. Ed. 51A. See Ed. 133)	IX-X and 1 hr. ar.	W	202EdH	Mr. Smith
Ind.115s‡	Supervision of Industrial Education (3 cred.; sr., grad.; prereq. Ind. 60, 80, Ed.Ad. 124 or consent of instructor)	IX-X and 1 hr. ar.	Th	202EdH	Mr. Fryklund
Ind.170f‡	Day Industrial Schools (2 cred.; jr., sr., grad.; prereq. Ind. 60, 61)	IX-X	F	202EdH	Mr. Fryklund

† A fee of \$1 per credit is charged for this course.

‡ Passing the qualifying examination in English and a C+ average (1.5 honor points per credit) in the major or the subject in which student teaching is done are prerequisite to registration in this course.

‡ Not a part of the four-year curriculum.

No.	Title	Hour	Day	Bldg.	Instructor
Ind.171s¶	Evening Industrial Schools (2 cred.; jr., sr., grad.; prereq. Ind. 170)	IX-X	M	209EdH	Mr. Fryklund
Ind.172s¶	Part-time Education (2 cred.; jr., sr., grad.; prereq. Ind. 170, 171)	IX-X	F	209EdH	Mr. Smith
Ind.200f,w,s*¶	Research Problems—Class meetings and individual conferences. (3, 6, or 9 cred.; approved graduates only)	IX-X	M	200EdH	Mr. Smith, Mr. Fryklund
Ind.250f-251w-252s¶	Problems in Vocational Education (6 cred.; approved graduates only. Plan for full year)	I-II	S	209EdH	Mr. Smith

Off-Campus Courses and Services—Mr. Widdowson and Mr. Fryklund.

Dunwoody Shop and Drawing Courses—arranged by Mr. Smith. (Special blank must be used.)

Shop and drawing courses are available in wide variety in the Institute of Technology, University campus, and the Division of Agricultural Engineering, Farm campus. Students may elect to pursue courses, day or evening, at the William Hood Dunwoody Industrial Institute without fees other than those paid to the University, except a deposit of \$1. Degree candidates, especially those transferring from other institutions, should bear in mind the maximum of 45 credits in shop work and drawing combined, which is enforced in this department. Credits in excess of 45 will be recorded but will not be counted toward degree requirements. Graduate students may have credit recorded but it will not be counted toward their degree.

Curriculum revision.—See College of Education Bulletin for 1940-42 for revised form, or request mimeographed materials at 200 Eddy Hall.

Graduate programs.—The departmental office will provide mimeographed materials descriptive of admission requirements and program patterns for both the M.A. and M.Ed. degrees, plans A, B, X, and Y. Letters of inquiry concerning Ph.D. programs will be appreciated.

METHODS AND DIRECTED TEACHING

Major adviser.—Assistant Professor Anderson.

Time required.—Students registered for practice teaching spend at least one hour a day in observation and teaching. They should get their practice teaching assignment before completing their registration for other classes. They should count on spending a minimum of 12 hours a week in all directed teaching courses.

Honor point average.—For registration in all special methods and directed teaching courses, a C+ average (1.5 honor points) per credit in the major or in the subject in which student teaching is done, is required.

Conference for student teachers.—The director of student teaching will arrange for a series of conferences which are a part of the required work in directed teaching. The hours at which these conferences are held will be announced in the fall.

Statement of fees.—For all courses in methods, directed teaching, and special methods and directed teaching combined, a fee of \$1 per credit is charged. Passing the qualifying examination in English and a C+ average (1.5 honor points per credit) in the major or the subject in which student teaching is done is prerequisite to all special methods and student teaching courses. For Clinical Methods and Directed Teaching in Speech Pathology see Ed.C.I. 174-175-176. For methods and directed teaching in special subjects see department concerned.

GENERAL COURSE

Ed.T.50w,s†	Special Methods and Supervised Teaching in Health Education for Public Health Nurses. (Same as P.M.&P.H. 70) (6 cred.; jr., sr., grad.; prereq. P.M.&P.H. 65, 66, 67 and permission of instructor) (Enrolment limited)	Ar	Ar	Ar	Miss Palmer
-------------	--	----	----	----	-------------

* This course may be taken for independent study under Plan B for the M.A. degree or under Plan Y for the M.Ed. degree.

† A fee of \$1 per credit is charged for this course.

‡ Not a part of the four-year curriculum.

COLLEGE OF EDUCATION

No.	Title	Hour	Day	Bldg.	Instructor
Ed.T.51Aw†§§	Special Methods of Teaching in Schools of Nursing (3 cred.; sr., grad.; prereq. or parallel Ed. 51A,B and Nu. 69)	III	MWF	Ar	Miss Petry
Ed.T.51Bw,s†§§	Special Methods of Teaching and Directed Teaching in Schools of Nursing (5 cred.; sr., grad.; prereq. Ed.T. 51A; prereq. or parallel Nu. 71)	IV	MWF	Ar	Miss Petry
	Winter	and 2 hrs. ar.			
	Spring	III	MWF	Ar	Miss Petry
Ed.T.52f,w,s†§	Directed Teaching (5 cred.; sr.; prereq. Special Methods Course)	Ar	Ar	Ar	Mr. Anderson
Ed.T.81†	<i>Techniques of Puppetry</i> (3 cred.; jr., sr.; prereq. 51A or 61A) (<i>Not offered</i>)				
Ed.T.85Af-85Bw-85Cs†	Practice and Field Work in Recreation Leadership (3 cred. for minors, 6 cred. for majors; sr.; prereq. Phys.Ed. 57, 136, or permission of instructor)	Ar	Ar	Ar	Mr. Haislet

ELEMENTARY EDUCATION

Ed.T.53s†§	Directed Teaching of Subnormal Children (5 cred.; sr.)	Ar	Ar	Ar	Mr. Anderson
Ed.T.54Af-54B†§	Directed Teaching in the Elementary School (3 cred. fall, 5 cred. winter; sr.; prereq. Ed. 61A-B, Ed.C.I. 60, 61)	Ar	Ar	Ar	Mr. Archer
Ed.T.55f†	Principles of Early Childhood Education (3 cred.; jr., sr.; prereq. C.W. 80 or simultaneously)	VIII	MWF	202Pt	Miss Mechem
Ed.T.56w†	Permanent Play Materials (2 cred.; jr., sr.; prereq. Ed.T. 55)	VII	WF	202Pt	Miss Peterson
Ed.T.57s†	Plastic Materials (3 cred.; jr., sr.; prereq. Ed.T. 55)	VIII	MWF	202Pt	Miss Headley
Ed.T.59w†	Story Telling for Young Children (2 cred.; jr., sr.; prereq. Ed.T. 55)	V	TTh	202Pt	Miss Headley
Ed.T.64†§	<i>Teaching of Geography and History in the Elementary School</i> (See Ed.C.I. 61) (<i>Not offered</i>)				
Ed.T.65†§	<i>Directed Teaching with Special Methods in Elementary Schools</i> (3 or 5 cred.; sr.; prereq. approval of instructor) (<i>Not offered</i>)				
Ed.T.75f,s†	Methods and Observation in the Nursery School (3 cred.; sr.; prereq. C.W. 40, Ed.T. 55, 56, 57, 59. Open only to students in home econ. and nursing ed.)	VII	M and ar.	Ar	Ar
Ed.T.76Af,s†	Methods and Observation: Nursery School (2 cred.; jr.; prereq. Psy. 1-2)	V	F and ar.	202Pt	Miss Peterson
Ed.T.76Bw†	Methods and Observation: Home-School Relations (2 cred.; jr., sr.; prereq. Ed.T. 55)	V	F and ar.	202Pt	Mrs. Cummings
Ed.T.76Cf,s†	Methods and Observation: Kindergarten (2 cred.; jr.; prereq. Ed.T. 55)	V	M and ar.	202Pt	Miss Headley
Ed.T.77Af-77Bw-77Cs††§	Directed Teaching in Kindergarten or Nursery School and Primary Grades (12 cred.; sr.; prereq. Ed.T. 55, 56, 57, 59 and 76A-B-C)	IX	M	100Pt	Miss Mechem
Ed.T.78A-79B†	<i>Methods in Primary Grades</i> (4 cred.; jr., sr.) (<i>Not offered</i>)				

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per credit is charged for this course.

§ Passing the qualifying examination in English and a C+ average (1.5 honor points per credit) in the major or in the subject in which student teaching is done are prerequisite to registration in this course.

¶ Requirements for registration in Ed.T. 51A-B are as follows:

1. A passing grade in Ed. 51A and B.
2. Passing of the qualifying examination in English.
3. Attainment of a scholastic average of 1.5 in the field in which the practice teaching is to be done. A major portion of the work in the teaching field should be completed.
4. The recommendation of the subject-matter department in the major field.
5. Passing of the required speech test.

An additional section of 51A will be added in the fall quarter and an additional section of 51B will be offered in the winter quarter as a continuation of 51A, if registration warrants.

SECONDARY EDUCATION

No.	Title	Hour	Day	Bldg.	Instructor
Ed.T.61s†§	Teachers Course in Norwegian (3 cred.; sr.; prereq. Scand. 4-5-6)	Ar	Ar	122F	
Ed.T.62f,w†§	Teachers Course in Swedish (3 cred.; sr.; prereq. Scand. 10-11-12)	VII	MWF	122F	
Ed.T.66Af-66Bw-66Cs††§	Special Methods and Directed Teaching in Secondary School English (9 cred.; sr.; prereq. consent of instructor)	VIII	TTh(f,w)	210Bu	Miss Smith
		VIII	TTh(s)	308F	
					and 6 hrs. ar.
Ed.T.66Amf†§	The Teaching of Composition in Secondary Schools (2 cred.; sr.)	VIII	TTh	210Bu	Miss Smith
Ed.T.66Bmw†§	The Teaching of Literature in Secondary Schools (2 cred.; sr.)	VIII	TTh	210Bu	Miss Smith
Ed.T.67Af-67Bw-67Cs††§	Special Methods and Directed Teaching in Mathematics (9 cred.; sr.; prereq. Math. 50 or 60)	VIII	TTh	205aUHS	Mr. Walker
					and 6 hrs. ar.
Ed.T.67Amf-67Bmw††§	The Teaching of Secondary School Mathematics (4 cred.; sr.; prereq. consent of instructor)	VIII	TTh	205aUHS	Mr. Walker
					and 1 hr. ar.
Ed.T.68Af-68Bw-68Cs††§	Special Methods Course and Directed Teaching in Secondary School Science (9 cred.; sr.; prereq. consent of instructor)	IX	MW	215UHS	Mr. Johnson, Mr. Peterson
					and 6 hrs. ar.
Ed.T.68Amf-68Bmw††§	Methods of Teaching Secondary School Science (4 cred.; sr.; prereq. consent of instructor)	IX	MW	6aPt	Mr. Johnson, Mr. Peterson
Ed.T.69Af-69Bw-69Cs††§	Special Methods and Directed Teaching in the Social Studies (9 cred.; sr.; prereq. 30 cred. in hist. or soc. sci. Consult instructor)	VIII	MW	100Pt	Mr. Wesley
					and 6 hrs. ar.
Ed.T.69Amf-69Bmw††§	Methods of Teaching the Social Studies (For students with a major in the social studies) (4 cred.; sr.; prereq. consent of instructor)	VIII	MW	100Pt	Mr. Wesley
Ed.T.70Af-70Bw-70Cs††§	Special Methods and Directed Teaching in German (9 cred.; sr.; prereq. German Comp. 50-51-52, German Conversation 53-54-55 and 15 additional credits)	IX	MW	114UHS	Miss Taeuber
					and 6 hrs. ar.
Ed.T.71Af-71Bw-71Cs††§	Special Methods and Directed Teaching in Latin (9 cred.; jr., sr.; prereq. 73 and any two of Latin courses numbered between 50 and 100)	IX	MW	112UHS	Miss Marlowe
					and 6 hrs. ar.
Ed.T.72Af-72Bw-72Cs††§	Special Methods and Directed Teaching in Romance Languages (9 cred.; sr.; prereq. 20 cred. above French 4. Consult instructor)	IX	TTh	206UHS	Miss Walker
					and 6 hrs. ar.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per credit is charged for this course.

§ Passing the qualifying examination in English and a C+ average (1.5 honor points per credit) in the major or the subject in which student teaching is done are prerequisite to registration in this course.

COLLEGE OF EDUCATION

No.	Title	Hour	Day	Bldg.	Instructor
Ed.T.73Af-73Bw-73Cs†‡§	Special Methods and Directed Teaching in Commercial Subjects (9 cred.; sr.; prereq. consent of instructor) Fall—shorthand; winter—typewriting; spring—bookkeeping and junior business training	VIII and 6 hrs. ar.	MW	11UHS	Ar
Ed.T.74w†§	Teachers Course in Journalism	(3 cred.; jr., sr.; prereq. Jour. 41 or 51) VII	MWF	420MurH	Mr. Kildow
Ed.T.88Af-88Bw-88Cs†‡§	Special Methods and Directed Teaching in Speech (9 cred.; prereq. 30 cred. in speech)	IX (f) VIII (s) VIII (f,w) and 6 hrs. ar.	TTh	308F 210Bu	Mr. Gilkinson Miss Smith
Ed.T.89Amf-89Bmw†‡§	Methods of Teaching the Social Studies (For students with minors in one of the social studies) (4 cred.; sr.; prereq. a minor in soc. sci.)	III	MW	202Pt	Mr. Morse

MUSIC EDUCATION

Major advisers.—Professor Scott; Instructor Hazel B. Nohavec.

Note.—Students following the Music Education Curriculum may elect seven credits in music in addition to the requirements of their curriculum. Five credits in education electives are required. All other electives must be in academic subjects.

Mu.Ed.1f	Music Orientation (No cred.; freshmen majoring in music education; no prereq.)	V	TTh	4Mu	Mr. Ferguson, Mrs. Nohavec, and others
Mu.Ed.4f-5w-6s†	Applied Instrumental Technique (6 cred.; soph.; no prereq.)	I VII	MTWF	4Mu(f) 4NMA(w,s)	Mr. Prescott
Mu.Ed.43f-44w-45s	University Farm Music Ensembles—Vocal and Instrumental. For students in Agriculture, Forestry, and Home Economics only. With special reference to music used in extension, farm, home, school, and recreational activities and situations (3 cred.; all; no prereq.)	Ar	Ar	Ar	Mr. Rhodes
Mu.Ed.50Af‡§	Primary Methods (2 cred.; jr.; no prereq.) Sec. 1 (For Mu.Ed. majors)	III	TTh	4Mu	Mrs. Nohavec
	2 (For nonmajors)	II	TTh	4Mu	Mrs. Nohavec
Mu.Ed.50Bw†	Intermediate Methods (2 cred.; prereq. Mu.Ed. 50A)	III	TTh	4Mu	Mrs. Nohavec
Mu.Ed.52s†	Technique of Teaching Appreciation (1 cred.; jr.; prereq. Ed. 51A)	III	TTh	4Mu	Mrs. Nohavec
Mu.Ed.53s†	High School Methods (3 cred.; jr.; prereq. Ed. 51A and Mu.Ed. 50A,B)	III	MWF	4Mu	Mrs. Nohavec
Mu.Ed.54w†	Operetta Production (3 cred.; jr.; prereq. Ed. 51A)	III	MWF	4Mu	Mrs. Nohavec
Mu.Ed.55w†	Survey and Evaluation of Vocal Materials and Methods (4 cred.; sr.; prereq. Mu.Ed. 50A, 50B, 53)	VI	MTWF	4Mu	Mrs. Nohavec

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per credit is charged for this course.

§ Passing the qualifying examination in English and a C+ average (1.5 honor points per credit) in the major or the subject in which student teaching is done are prerequisite to registration in this course.

¶ In case of conflict students may register for another section with the approval of the instructor.

No.	Title	Hour	Day	Bldg.	Instructor
Mu.Ed.59w††	Choral Literature and Conducting (2 cred. for seniors; 1 cred. for fr., soph., jr.)	V	TTh	106Pt	Mrs. Nohavec
Mu.Ed.60f-61w-62s††‡	Supervision and Teaching (9 cred.; sr.; prereq. Ed. 51A,B,C and Mu.Ed. 50A,B, 53 and a C+ average in the major)	IX-X and 6 hrs. ar.	W	4Mu	Mrs. Nohavec
Mu.Ed.63w‡	Band Conducting (2 cred.; jr., sr.; prereq. 4-5-6)	VI	TTh	4NMA	Mr. Prescott
Mu.Ed.64s‡	Band Organization (3 cred.; sr.; prereq. 4-5-6)	VI	MWF	4NMA	Mr. Prescott
Mu.Ed.65w‡	Instrumentation (3 cred.; jr.; prereq. Mu. 4-5)	II	TThS	4Mu	
Mu.Ed.68s	Conducting of Instrumental Music and Survey of Materials (4 cred.; sr.; prereq. Mu.Ed. 65)	I-II	MWF	5NMA	
Mu.Ed.70f	Accompanying and Sight Reading (2 cred.; jr., sr.)	III	TTh	3Mu	Mr. Scott
Mu.Ed.101Es	Tests and Measurements in Music (2 cred.; sr., grad.; prereq. permission of instructor)	VI	TTh	4Mu	Mrs. Nohavec
Mu.Ed.220Ef,w,s	Survey and Application of Research in Music Education (3 cred.; prereq. Mu.Ed. 101)	Ar	Ar	Ar	Mrs. Nohavec
Mu.Ed.224Ef,w,s	Seminar and Individual Research Problems in Music Education (2 to 5 cred.)	Ar	Ar	Ar	Mrs. Nohavec and others
Mu.Ed.225Ef,w,s††	Advanced Applied Music (2 to 4 cred.; prereq., entrance exam.)	Ar	Ar	Ar	Ar

NURSING EDUCATION

Major adviser.—Professor Katharine Densford.

For other courses in Nursing see the bulletins of the School of Nursing and the Medical School. For courses in Nursing Education and in Public Health Nursing see pages 89-90. For specialized curricula in Nursing Education and Public Health Nursing see the College of Education Bulletin. See also Ed.T. 50, 51A, 51B.

Nu.Ed.60s	Ward Administration (4 cred.; sr. nurse or grad. nurse; no prereq.)	VI-VII	TTh	Ar	Miss MacDonald
Nu.Ed.63f	Motion Study (2 cred.)	VI, VII, VIII	Th	202ME	Mr. Koepke
Nu.Ed.65w	Comparative Nursing Procedures (4 cred.; sr. or grad. nurse; prereq. permission of instructor)	VI-VII	TTh	411McS	Miss Petry, Miss Harrington, and others
Nu.Ed.69f	Survey of Conditions and Trends in Nursing (3 cred.; sr., grad.; no prereq.)	IV	MWF	Ar	Miss Densford
Nu.Ed.71s	Curriculum Making in Schools of Nursing (3 cred.; sr., grad.; no prereq.)	VI	MWF	Ar	Miss Petry
Nu.Ed.72w	Teaching and Supervision in Schools of Nursing (3 cred.; sr., grad.; no prereq.)	VIII IX	TTh Th	Ar	Miss Petry Miss Harrington

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per credit is charged for this course.

§ Passing the qualifying examination in English and a C+ average (1.5 honor points per credit) in the major or the subject in which student teaching is done are prerequisite to registration in this course.

¶ Four credits are required for Mu.Ed. 59. This course should be repeated until all four credits are earned.

†† One individual lesson per week, 2 credits, \$25; two individual lessons per week, 4 credits, \$50.

PHYSICAL EDUCATION FOR MEN

Major advisers.—Associate Professors Keller and Nordly; Assistant Professor Piper.

For the program in sports education open to all men students in the University, see page 14.

COURSES IN MAJOR AND MINOR CURRICULA IN PHYSICAL EDUCATION FOR MEN

No.	Title	Hour	Day	Bldg.	Instructor
Phys.Ed.4Af-4Bw-4Cs	Fundamentals of Athletic Sports (1 cred. per qtr.; no prereq.)	VII-VIII	TTh	215CH	Mr. MacMillan, Mr. Kelly, Mr. Ronning
Phys.Ed.5Af-5Bw-5Cs	Physical Education Activities (3 cred.; no prereq.)	III-IV III	T Th	CH	Mr. Piper
Phys.Ed.6Af-6Bw	Intramural Sports (1 cred. per qtr.; all; no prereq.)	VI(f,w)	MWF	215CH	Mr. Keller and others
Phys.Ed.6Cs	Intramural Sports (1 cred.; prereq. ability to swim 100 yards)	I(s)	MWF	215CH	Mr. Thorpe
Phys.Ed.7Af-7Bw-7Cs	Physical Education Activities (1 cred. per qtr.; soph., jr., sr.)	II-III	TTh	CH Gym	Mr. Piper and others
Phys.Ed.8s	Dual Spring Sports (1 cred.; all no prereq.)	VII	MWF	215CH	Mr. Smith, Mr. Brain
Phys.Ed.9s	Rhythms (1 cred.; jr., sr.)	II	TThS	Ar	Mr. Piper
Phys.Ed.50s	Human Anatomy (4 cred.; soph.; prereq. Zool. 1-2-3 or G.C. 101, 102-103)	III-IV	MWF	Ar	Mr. Keys and others
Phys.Ed.51f	Mechanics of Movement (3 cred.; jr.; prereq. 50)	II	MWF	206CH	Mr. Osell
Phys.Ed.53††,54w†, 55s††	Methods and Materials in Physical Education (4 cred; jr.; prereq. 5A-B-C, 6A-B-C, and 7A-B-C)	Lect. Lab.	V(f,w,s) Ar	Th 206CH	Mr. Schrupp
Phys.Ed.56w	Nature and Function of Play (2 cred.; jr., sr.; prereq. Psy. 1, 2, or equiv.)	VII-VIII	T	Ar	
Phys.Ed.57s	Operation and Conduct of Play Centers (3 cred.; jr., sr.; prereq. permission of instructor)	VII	MWF	206CH	Ar
Phys.Ed.60s	Prevention and Care of Injuries (2 cred.; jr.)	III	TThS	206CH	Mr. Boyce
Phys.Ed.61f	History of Physical Education (2 cred.; sr.)	I	MWF	206CH	Mr. Keller
Phys.Ed.63s	Organization and Administration of Physical Education (3 cred.; sr.; prereq. 53, 54, 55)	III	MWF	206CH	Mr. Piper
Phys.Ed.66Af,66Bw	Officiating of Athletics (4 cred.; sr.; prereq. 4A-B-C and 6A-B-C)	Lect. Lab.	V Ar	T 206CH	Mr. Nordly and others
Phys.Ed.67s	Coaching of Athletic Sports (Football) (2 cred.; sr.; prereq. 4B and one year experience on Minnesota squad)	II	TThS	214CH	Dr. Hauser, Mr. Wilkinson

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per credit is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
Phys.Ed.68f	Coaching of Athletic Sports (Basketball) (2 cred.; sr.; prereq. 4A)	VI	MWF	214CH	Mr. MacMillan
Phys.Ed.69s	Coaching of Athletic Sports (Track) (2 cred.; sr.; prereq. 4C)	VII and 2 hrs. ar.	MW	214CH	Mr. Kelly
Phys.Ed.72w	Coaching of Athletic Sports (Baseball) (2 cred.; sr.; prereq. permission of instructor)	VI	MWF	214CH	Mr. Nordly
Phys.Ed.73f†,74w‡, 75s†‡	Directed Teaching (6 cred.; sr.; prereq. 4A-B-C; 5A-B-C; 6A-B-C; 7A-B-C; 53, 54, 55)	V and 5 hrs. ar.	M	214CH	Mr. Piper, Mr. Schrupp
Phys.Ed.78w	Elements of Scout Leadership (2 cred.; no prereq.)	VI	TTh	206CH	Mr. Osell
Phys.Ed.79s	Camp Craft and Camp Administration (2 cred.; no prereq.)	Lect. VI Lab. VI-VII	T Th	206CH	Mr. Osell
Phys.Ed.101Ew§	Principles of Physical Education (3 cred.; sr., grad.; prereq. 53, 54, 55)	I	MWF	206CH	Mr. Keller
Phys.Ed.103Es§	Physical Examination and Adaptation of Activities (3 cred.; sr., grad.; prereq. 50, 51, Physiol. 50, 51 or equiv.)	VI	MWF	206CH	Dr. Hauser, Mr. Osell
Phys.Ed.133Ef§	Special Administrative Problems in Physical Education in Secondary Schools (3 cred.; sr., grad.; prereq. 63 or equiv.)	I-II and 1 hr. ar.	S	206CH	Mr. Nordly
Phys.Ed.134Ew§	The Secondary School and College Curriculum in Physical Education (3 cred.; sr., grad.; prereq. 63, 101E or equiv.)	I-II and 1 hr. ar.	S	206CH	Mr. Nordly
Phys.Ed.135Es§	Tests and Measurements in Physical Education (3 cred.; sr., grad.; prereq. 10 hrs. in phys. ed. and Ed. Psy. 60 or equiv.)	I-II and 1 hr. ar.	S	206CH	Mr. Keller
Phys.Ed.136Ef§	Leadership in Recreation (3 cred.; sr., grad.; prereq. 56 or equiv. and 10 hrs. in ed. or permission of instructor)	IX-X IX	T Th	206CH	Ar
Phys.Ed.137Es§	Recent Literature and Research in Health Education, Physical Education, and Recreation (3 cred.; grad.; permission of instructor)	IX-X IX	T Th	206CH	Mr. Nordly
Phys.Ed.138Ef§	Administration of Physical Education in Colleges and Universities (2 cred.; sr., grad.; prereq. 63 or 133E or equiv.)	IX-X	M	206CH	Mr. Keller
Phys.Ed.141E§	Administration and Supervision of Public Recreation (3 cred.; jr., sr., grad.) (Not offered in 1942-43)				
Phys.Ed.142E§	Group Leadership in Community Recreation (3 cred.; sr., grad.) (Not offered in 1942-43)				
Phys.Ed.237E§	Problems in Health Education, Physical Education, and Recreation (2 to 6 cred.; grad.; prereq. 137E and Ed. 208; ar.)	Ar	Ar	Ar	Mr. Nordly

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per credit is charged for this course.

§ The designation "E" after a course number over 100 signifies that the course is of graduate level in the College of Education but does not carry credit for Plans A and B in the Graduate School.

¶ Passing the qualifying examination in English and a C+ average (1.5 honor points per credit) in the major is prerequisite to this course.

PHYSICAL EDUCATION FOR WOMEN

Major advisers.—Associate Professors Baker and Kissock.

COURSES IN MAJOR, MINOR, AND GRADUATE CURRICULA IN
PHYSICAL EDUCATION FOR WOMEN

Open only to students in the College of Education, with the exception of Courses 23A-B, 46A-B-C, 54, 60, 66, and 80.

Statement of fees.—A physical education fee of \$1.75 per quarter is charged for all starred courses, maximum fee per student \$3.50 per quarter. For methods and directed teaching courses a fee of \$1 per credit is charged as indicated in the footnotes.

For the program in physical education open to all women students in the University, see pages 16-18.

No.	Title	Hour	Day	Bldg.	Instructor
21Af-Bw-Cs*	Freshman Major Team Sports	(1½ cred.; no prereq.)			
		VIII (fall, spring)	MW	153NGW	Ar
		VI (winter)	W	151NGW	Ar
22Af-Bs*†††	Freshman Individual Sports	(1 cred.; no prereq.)			
		I (fall)	TTh	60NGW	Ar
		I (spring)	MW	151NGW	Ar
23Af-Bw*	Games and Rhythms for Primary, Intermediate, and High School Grades	(1 cred.; no prereq.)			
		VIII (f,w)	TTh	151NGW	Miss Kissock
25w,s	First Aid	(1 cred.; no prereq.)			
		I (winter)	TTh	3NGW	Miss Kelly
		II (spring)	MW	3NGW	Miss Kelly
41Af-Bw-Cs*	Sophomore Team Sports	(1½ cred.; prereq. 21A-B-C)			
		VIII	MW	151NGW	Ar
42Af-Bs*†††	Sophomore Individual Sports	(1 cred.; prereq. 22B)			
		II (fall)	MW	60NGW	Ar
		I (spring)	TTh	151NGW	Ar
43s*	Tap and Ballroom Dancing	(1 cred.; no prereq.)			
		II	TThS	151NGW	Miss Snell, Miss Gardner
44Af-Bw*	Group Gymnastics	(1 cred.; no prereq.)			
		I	MW	153NGW	Miss Snell, Miss Gardner
45Af-Bw*	Sophomore Major Swimming	(1 cred.; prereq. elem. swimming test)			
		II	TTh	58NGW	Miss Starr
46Af-Bw-Cs*	Modern Dance, Elementary	(1½ cred.; no prereq.)			
		VII	MW	151NGW	Miss Gardner
47Af-Bw*	Tumbling, Stunts, and Apparatus	(1 cred.; no prereq.)			
		I	TTh	153NGW	Miss Snell
48s*†	Lifesaving and Water Front Safety	(1 cred.; prereq. 45A-B)			
		III, IV	T	58NGW	Miss Starr
		III	Th		
50s††	General Anatomy	(4 cred.; prereq. Zool. 1-2-3)			
		III, IV	MWF	312 IA	Miss Braun
51s††	Mechanics of Movement	(3 cred.; prereq. 50 and some knowledge of physics)			
		VI, VII	TTh	312 IA	Miss Braun
60s	Principles of Play	(2 cred.; prereq. Psy. 1-2)			
		III	MW	201NGW	Miss Kissock
61Af-Bw-Cs*†	Technique of Teaching Sports	(3 cred.; jr.; prereq. 41A-B-C, 42A-B)			
		II	MWF	151NGW	Miss Snell

* A physical education fee of \$1.75 per quarter is charged for this course.

† A fee of \$1 per credit is charged for this course.

†† A fee of \$2 is charged for 50 and 51 whether taken as a whole or as a part.

††† Students must pay to \$.50 for tennis permit, and supply their own golf equipment.

‡ A lifesaving certificate is a prerequisite for student teaching in swimming.

No.	Title	Hour	Day	Bldg.	Instructor
62s	Physical Examination (2 cred.; jr.; prereq. 51)	II	TThS	153A NGW	Miss Kelly
63w*‡	Technique of Teaching Folk Dancing (1 cred.; jr.; prereq. 23A-B, 43)	II	TThS	153NGW	Miss Baker
64w*‡	Technique of Teaching Group Gymnastics (1 cred.; jr.; prereq. 44A-B, 69)	IV	TS	153NGW	Miss Snell, Miss Gardner
65s*‡	Integration of Special Methods (2 cred.; jr.; prereq. minimum of two courses in special techniques)	III IV	TThF T	151NGW	Miss Baker
66f*	Modern Dance, Intermediate (½ cred.; jr.; prereq. 46A-B-C) I (begins 8:00 a.m.)		T	151NGW	Ar
67Af-Bw*‡	Technique of Teaching Swimming (2 cred.; jr.; prereq. 45A-B and 48)	III	TThS	58NGW	Miss Starr
69f*	Fundamentals of Movement (½ cred.; jr.; no prereq.)	IV	TS	151NGW	Miss Christensen
73Aw-Bs*‡	Technique of Teaching Rhythm (1½ cred.: 73A 1 cred., 73B ½ cred.; jr.; prereq. 66)	I	TTh	151NGW	Miss Baker
74Af-Bw*	Advanced Fundamentals of Movement (1 cred.; sr.; prereq. 64)	II (fall) III (winter)	TTh MW	153NGW 153NGW	Miss Baker Miss Baker
81f	Trends in Physical Education (2 cred.; sr.; no prereq.)	III	TTh	3NGW	Miss Kissock
82f	Principles of Physical Education (3 cred.; sr.; prereq. 65)	II	MWF	201NGW	Miss Baker
83ff	School Health Education, Method and Content (3 cred.; sr.; prereq. 65, P.M.&P.H. 50 or 51)	III	MWF	201NGW	Miss Starr
84s	Problems in Physical Education (2 cred.; prereq. permission of instructor)	II	TTh	201NGW	Miss Snell
85Af-Bw	Remedial Activities in Physical Education (3 cred.; sr.; prereq. 62)	I (fall) I (winter)	MWF MW	3NGW 3NGW	Miss Kelly Miss Kelly
90Af-Bw-Cs‡	Student Teaching (7 cred.; sr.; prereq. 60, 61A-B-C, 63, 64, 65, 67A-B, 73A-B)	Ar	Ar	Ar	Miss Baker
95Aw-Bs‡	Administration of Physical Education (3 cred.; sr.; prereq. 60, 81, 82, 83)	IV (winter) IV (spring) 1 hr. ar.	WF	201NGW	Miss Baker Miss Baker
111Ef‡§	An Advanced Course in Methods of Teaching in Physical Education (3 cred.; sr., grad.; prereq. undergrad. methods courses, 60 and 82 or equiv.)	IX, X and 1 hr. ar.	W	3NGW	Miss Baker
112Es§	Supervision of Physical Education (3 cred.; sr., grad.; prereq. teaching experience)	IX, X and 1 hr. ar.	W	3NGW	Miss Baker
113Ew§	Physical Education in the Elementary Schools (3 cred.; sr., grad.; prereq. 60 and 82 or equiv. and experience teaching elementary grade children)	IX, X and 1 hr. ar.	T	3NGW	Miss Baker
114Ew§	The Administration of the School Health Education Program (3 cred.; sr., grad.; prereq. 83, P.M.&P.H. 50 or 51 or equiv.)	IX, X and 1 hr. ar.	W	3NGW	Miss Starr
115Ef§	Recent Literature and Research in Mechanics of Movement (3 cred.; sr., grad.; prereq. Physiol. 51, Phys.Ed. 71 or equiv.)	Ar	Ar	Ar	Miss Braun

* A physical education fee of \$1.75 per quarter is charged for this course.

‡ A fee of \$1 per credit is charged for this course.

§ The designation "E" after a course number over 100 indicates that the course is of graduate level in the College of Education but does not carry credit for Plans A and B in the Graduate School.

¶ For students minoring in Physical Education, this course carries 2 credits, and no prerequisites are required.

COLLEGE OF EDUCATION

No.	Title	Hour	Day	Bldg.	Instructor
221f-222w-223s	Seminar in Physical Education	Ar	Ar	Ar	Miss Baker and others

Elective Courses

54s*	Camp Leadership (2 cred.; no prereq.)	IV and 1 hr. ar.	MW	201NGW	Miss Starr
71f*	Applied Physiology (3 cred.; prereq. 51 and Physiol. 51)	I	TThS	3NGW	Miss Braun
		II	S		
79s	Massage and Therapeutic Exercises (2 cred.; prereq. 85A-B)	I	TThS	153A NGW	Miss Kelly
80w	Principles of Rhythm (2 cred.; prereq. some rhythm experience)	II	WF	201NGW	Miss Baker

PREVENTIVE MEDICINE AND PUBLIC HEALTH

The College of Education offers specialized curricula in Public Health Nursing and Nursing Education. For curricula see College of Education Bulletin. For class schedule see pages 88-90 in this bulletin.

THEORY AND PRACTICE OF TEACHING

For courses formerly listed in this department, see General Courses, Curriculum and Instruction, and Methods and Directed Teaching.

* A physical education fee of \$1.75 per quarter is charged for this course.

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

All courses in the College of Agriculture, Forestry, and Home Economics are scheduled on the University Farm campus except those indicated by an asterisk (*).

AGRICULTURAL BIOCHEMISTRY

Freshman and Sophomore Courses

No.	Title	Hour	Day	Bldg.	Instructor
2f,w††	Quantitative Methods (5 cred.; soph., jr., sr.; prereq. Inorg. Chem. 10 cred.) (Limited to 32)				
		VI, VII, VIII, IX	MWF	102SnH	Mr. Greenwood, Mr. Reid
4f	Introduction to Organic and Biochemistry (5 cred.; soph., jr., sr.; prereq. Inorg. Chem. 10 cred.‡) (Sections limited to 125 each)				
	Sec. 1	I	MTWThF	107En	Mr. Greenwood
	2	II	MTWThF	107En	Mr. Greenwood
4w	Introduction to Organic and Biochemistry (Same as 4f)				
		II	MTWThF	107En	Mr. Greenwood
5s	Plant Biochemistry (5 cred.; soph., jr., sr.; prereq. 4, Soils 9 advised)				
		II	MTWThF	107En	Mr. Greenwood
6f	Animal Biochemistry (5 cred.; soph., jr., sr.; prereq. 4, Soils 9 advised)				
		II	MTWThF	113SnH	Mr. Palmer

Junior and Senior Courses

101f-102w‡	Agricultural Quantitative Analysis (6 cred.; jr., sr.; prereq. 2)				
		VI, VII, VIII	MWF	208SnH	Mr. Briggs
103s‡	Dairy Chemistry (5 cred.; jr., sr.; prereq. 2, 6)				
	Lect.	VI	MWF	113SnH	Mr. Palmer
	Lab.	VII, VIII, IX	MWF	208SnH	Mr. Palmer
108s	Chemistry of Wheat and Wheat Products (3 cred.; jr., sr.; prereq. 5)				
		II	MWF	211SnH	Mr. Geddes
110s‡	Flour Laboratory Methods (3 to 5 cred.; jr., sr.; prereq. 101-102 or equiv.)				
		VI, VII, VIII, IX	MWF	211SnH	Mr. Geddes, Mr. Merritt
113f-114w- 115s‡	Biochemical Laboratory Methods (6 cred.; jr., sr.; prereq. quant. anal., parallel 119, 123)				
		VI, VII, VIII	TTh	202,208SnH	Mr. Sandstrom
116w	Advanced Animal Nutrition (3 cred.; jr., sr.; prereq. 6 or Physiol. Chem. 120 advised)				
		III	TThS	211SnH	Mr. Palmer, Miss Kennedy
117s‡	Laboratory Problems in Animal Nutrition (3 cred.; jr., sr.; prereq. 116, instructor's permission)				
		Ar	Ar	314SnH	Mr. Palmer, Miss Kennedy
118f,w,s‡	Laboratory Problems in Biochemistry (3 or 5 cred.; sr.; prereq. 113-114, 119; or 103 or 110)				
		Ar	Ar Ar	Ar	
119f	Colloids (3 cred.; sr.; prereq. Zool. or Bot. 9 cred., and Org. Chem. equivalent to 4; 5 or 6 advised)				
		III	MWF	113SnH	Mr. Gortner

‡ A laboratory fee of \$5 is required for each quarter of this course. The \$5 card purchased from the cashier's office, University Farm, must be presented before laboratory space will be assigned. A \$5 breakage card against which breakage can be charged must be purchased also.

§ By special permission of the student's adviser General College Course 37A-B-C will be acceptable as a prerequisite.

†† A laboratory fee of \$2 is required for this course. A \$5 card (from which the \$2 fee will be deducted) is to be purchased from the cashier's office, University Farm.

AGRICULTURE, FORESTRY, AND HOME ECONOMICS

No.	Title	Hour	Day	Bldg.	Instructor
120w	Proteins (3 cred.; sr.; prereq. 119)	III	MWF	113SnH	Mr. Gortner
121w	Carbohydrates (3 cred.; sr.; prereq. 119)	II	MWF	113SnH	Mr. Geddes
122s	The Lipids and Fats (3 cred.; sr.; prereq. 119)	III	TThS	113SnH	Mr. Briggs
123s	Enzymes (3 cred.; sr.; prereq. 119)	III	MWF	113SnH	Mr. Sandstrom

AGRICULTURAL ECONOMICS

Freshman and Sophomore Courses

1f	Principles of Economics I (3 cred.; soph., jr., sr.; no prereq.) (Sections limited to 60 each)				
	Sec. 1	I	MWF	109HH	Mr. Lowe
	2	I	TThS	109HH	Mr. Lowe
1w	Principles of Economics I (Same as 1f) (Sections limited to 60 each)				
	Sec. 1	I	TThS	100HH	Mr. Halvorson
	2	III	MWF	109HH	Mr. Lowe
2w	Principles of Economics II (5 cred.; soph., jr., sr.; prereq. 1) (Sections limited to 60 each)				
	Sec. 1	I	MTWThF	109HH	Mr. Lowe
	2	III	MTWThF	204So	Mr. Halvorson
2s	Principles of Economics II (Same as 2w) (Sections limited to 60 each)				
	Sec. 1	I	MTWThF	109HH	Mr. Halvorson
	2	III	MTWThF	109HH	Mr. Lowe
3f,w,s	Principles of Economics (Home Economics) (5 cred.; soph., jr., sr.; no prereq.) (Sections limited to 60 each)	II	MTWThF	109HH	Mr. Lowe
7w	Natural Resources (3 cred.; soph., jr., sr.; no prereq.)	III	TThS	109HH	Mr. Dowell
8s	Rural Economics (3 cred.; soph., jr., sr.; prereq. 2 or 3)	III	TThS	210HH	Mr. Jesness
25f,w	Principles of Accounting (4 cred.; soph., jr., sr. in agr., for., and home econ. only) (Limited to 50)	II(f)	MWF	311HH	Mr. Koller
	Lect.	II(w)	TThS	311HH	
	Lab.	VIII, IX	Th	311HH	
30f	Agricultural Prices (3 cred.; soph., jr., sr.; prereq. 2)	II	TThS	312HH	Mr. Halvorson
40f,s	Principles of Marketing Organization (3 cred.; soph., jr., sr.; prereq. 2)	I(f)	MWF	210HH	Mr. Cox
		II(s)	MWF	210HH	Mr. Cox
47s	Marketing Accounting (4 cred.; soph., jr., sr.; prereq. 25)	IV	MWF	311HH	Mr. Koller
	Lect.	IV	MWF	311HH	Mr. Koller
	Lab.	VIII, IX	F	311HH	

Junior and Senior Courses

50f§	Farm Finance (5 cred.; jr., sr. in agr. and for. only; prereq. 2)	IV	MTWFS	312HH	Mr. Koller
80s§	Farm Accounting (3 cred.; jr., sr.)	I	TThS	312HH	Mr. Engene
90f§	Agricultural Statistics (5 cred.; jr., sr.)	III	TThS	312HH	Mr. Cox
	Lect.	Ar	Ar		
102w	Farm Organization (3 cred.; jr., sr.; prereq. 2) (Limited to 60)	II	TThS	210HH	Mr. Pond
103s	Farm Operation (3 cred.; jr., sr.; prereq. 102) (Limited to 60)	II	TThS	100HH	Mr. Pond

§ Open to sophomores on petition.

No.	Title	Hour	Day	Bldg.	Instructor
104s	Types of Farming (3 cred.; jr., sr.; prereq. 2)				
		III	MWF	312HH	Mr. Pond
110f-111w	Economics of Agricultural Production I and II (6 cred.; jr., sr.; prereq. 2)				
		I	TThS	312HH	Mr. Dowell
126f,s	Economics of Consumption (3 cred.; jr., sr.; prereq. 2 or 3)				
		I	TThS	100HH	Mr. Waite
131w	Market Prices (3 cred.; jr., sr.; prereq. 30, 40)				
		III	TThS	312HH	Mr. Waite
135s	Methods of Price Analysis (3 cred.; sr.; prereq. 30, 191)				
		III	TThS	312HH	Mr. Waite
140f	Marketing Organization: Staples (3 cred.; jr., sr.; prereq. 40)				
		III	MWF	312HH	Mr. Cox
141w	Marketing Organization: Dairy and Poultry Products (3 cred.; jr., sr.; prereq. 40)				
		II	MWF	312HH	Mr. Jesness
142s	Marketing Organization: Fruits and Vegetables (2 cred.; jr., sr.; prereq. 40)				
		III	MW	311HH	Mr. Cox
143w	Marketing Organization: Livestock and Meats (3 cred.; jr., sr.; prereq. 40)				
		III	MWF	312HH	Mr. Dowell
144f	Co-operative Organization (3 cred.; jr., sr.; prereq. 40)				
		II	TThS	311HH	Mr. Jesness
150s	Advanced Farm Finance (3 cred.; jr., sr.; prereq. 50 or equiv.)				
		2:30-4:00 p.m.	TTh	312HH	Mr. Koller
170s	Land Economics (3 cred.; jr., sr.; prereq. 110)				
		1:30-3:00 p.m.	WF	312HH	Mr. Dowell
191w	Advanced Agricultural Statistics (3 cred.; jr., sr.; prereq. 90)				
		IV	MWF	312HH	Mr. Waite

See also Economics and Business Administration in School of Business Administration section.

AGRICULTURAL EDUCATION

For list of courses in Agricultural Education see courses listed under the College of Education, page 115.

AGRICULTURAL ENGINEERING

Freshman and Sophomore Courses

3f,w,s	Mechanical Drawing (3 cred.; no prereq.) (Sections limited to 60 each; spring section open to foresters only)				
		III, IV(f,w)	MWF	303En	Mr. Otis
		VII, VIII(s)	MWF	303En	
4s	General Woodworking (3 cred.; no prereq.)				
	Lect.	I	MWF	41En	Mr. Christopherson
	Lab. Sec. 1	VI, VII, VIII	W	48En	
	2	VI, VII, VIII	Th	48En	
5f	Farm Structures Laboratory (3 cred.; prof. agr. eng. only; no prereq.)				
	Lect.	I	MW	41En	Mr. Christopherson
	Lab.	II	MW	48En	
		I, II	F		
7s	Buildings (3 cred.; no prereq.)				
		IV	MWF	305En	Mr. White
11w	Applied Mathematics (5 cred.; high school elementary algebra and plane geometry or their qualitative equivalent) (Sections limited to 20 each)				
	Sec. 1	III	MTWThF	105En	Mr. Manson,
	2	III	MTWThF	106En	Mr. Park
	3	IV	MTWFS	106En	
12s	Agricultural Machinery (3 cred.; no prereq.) (Sections limited to 45 each)				
	Sec. 1	I	MWF	217En	Mr. Schwantes
	2	I	MF	216En	
		IV	T		
13f,s	Gas Engines and Tractors (3 cred.; no prereq.) (Sections limited to 40 each)				
		VI, VII,			
		VIII(f)	MW	216,37En	Mr. Torrance
		VI, VII,			
		VIII(s)	MF		

AGRICULTURE, FORESTRY, AND HOME ECONOMICS

No.	Title	Hour	Day	Bldg.	Instructor
15w	Electricity in Agriculture (3 cred.; prereq. 23 or equiv.)				
	Lect.	VI	TTh	101En	Mr. Hustrulid
	Lab.	VII, VIII, IX	Th	5En	Mr. Hustrulid
18s	Agricultural Automotives (4 cred.; prof. agr. eng. only; prereq. Phys. 7)				
	Lect.	VI	TTh	216En	Mr. Torrance,
	Lab.	VII, VIII, IX	TTh	37En	Mr. Strait
19f	Elementary Surveying (3 cred.; prereq. 3, 11 or trigonometry) (Sections limited to 30 each)				
	Lect.	IV	T	105En	Mr. Park
	Lab. Sec. 1	VI, VII, VIII	TTh	305En	Mr. Manson,
	2	VI, VII, VIII	WF	305En	Mr. Park
19s	Elementary Surveying (Same as 19f)				
	Lect.	IV	T	105En	Mr. Park
	Lab.	VII, VIII, IX	TTh	305En	Mr. Manson, Mr. Park
20f	Advanced Surveying (3 cred.; prereq. 19) (Limited to 45)				
	Lect.	IV	M	105En	Mr. Manson, Mr. Park
	Lab.	VII, VIII, IX	M	305En	Mr. Manson, Mr. Park
		VI, VII, VIII	W		
20s	Advanced Surveying (Same as 20f)				
	Lect.	VI	M	105En	Mr. Manson, Mr. Park
	Lab.	VII, VIII, IX	MF	305En	Mr. Manson, Mr. Park
21s	Elements of Surveying (5 cred.; prof. agr. eng. only; prereq. Draw 3 and M. & M. 12)				
	Lect.	V	M	105En	Mr. Roe, Mr. Manson
	Lab.	VI, VII, VIII, IX	MWF	305En	Mr. Roe, Mr. Manson, Mr. Park
22s	Agricultural Machinery Laboratory (1 cred.; prereq. 12 or parallel) (Limited to 16)				
		VI, VII, VIII	T	105En	Mr. Schwantes
23w	General Physics (5 cred.; no prereq.) (Lab. sections limited to 20 each) (Not open for credit to students offering one unit of high school physics for entrance)				
	Lect.	I	MWF	101En	Mr. Hustrulid
	Lab. Sec. 1	VI, VII, VIII, IX	T	102En	Mr. Tyler
	2	VI, VII, VIII, IX	W	102En	Mr. Hustrulid
24f	Agricultural Physics I (4 cred.; prereq. Math. 6 or equiv.) (Lab. sections limited to 16 each)				
	Lect.	III	MWF	101En	Mr. Hustrulid
	Lab. Sec. 1	VI, VII	M	102En	Mr. Hustrulid
	2	VI, VII	F	102En	Mr. Hustrulid
25w	Agricultural Physics II (4 cred.; prereq. 24)				
	Lect.	I	TThS	101En	Mr. Hustrulid
	Lab. (Same as 24f)			102En	
28w	Land Clearing (2 cred.; no prereq.) (Offered only in even numbered years. Not offered in 1942-43)				
		I	TTh	105En	Mr. Schwantes
31w,s	Principles of Drainage (3 cred.; no prereq.)				
		II(w)	MWF	105En	Mr. Roe
		I(s)	MWF	105En	Mr. Manson
32w	Elements of Supplemental Irrigation (2 cred.; no prereq.) (Offered only in odd numbered years. Offered in 1942-43)				
		I	TTh	105En	Mr. Roe, Mr. Park

No.	Title	Hour	Day	Bldg.	Instructor
35f,s	Household Physics (5 cred.; no prereq.) (Lab. sections limited to 16 each)				
	Lect. (f)	III	TThS	101En	Mr. Hustrulid
	Lab. (f) Sec. 1	I, II	ThS	102En	Mr. Hustrulid
	2	VI, VII	TTh	102En	Mr. Tyler
	Lect. (s) Sec. 1	I	MWF	101En	Mr. Hustrulid
	2	III	TThS	101En	Mr. Hustrulid
	Lab. (s) Sec. 1	I, II	TTh	102En	Mr. Hustrulid
	2	VI, VII	MF	102En	Mr. Tyler
	3	VI, VII	TTh	102En	Mr. Tyler
	4	VIII, IX	MF	102En	Mr. Tyler
	5	VIII, IX	TTh	102En	Mr. Tyler
37f,w,s	Rural Sanitation and Water Supply (3 cred.; no prereq.)				
	I(f)		TThS	101En	Mr. Tyler
	I(w)		MWF	101En	Mr. Tyler
	(The spring section for prof. agr. eng. only; prereq. M.&M. 129)				
	I(s)		MWF	101En	Mr. Tyler
40f,s	Mechanical Training (3 cred.; no prereq.) (Limited to 40)				
	I, II		MWF	20,106En	Mr. Dent
41w	Metal Work (3 cred.; no prereq.) (Limited to 30)				
	I, II		MWF	20,106En	Mr. Dent
42s‡	Art Metal Work (3 cred.; no prereq.) (Limited to 15)				
	VI, VII, VIII		TTh	20,106En	Mr. Dent
43f	Mechanical Laboratory (3 cred.; prof. agr. eng. only; no prereq.)				
	I, II		TThS	20,106En	Mr. Dent
44s	Advanced Drawing (2 cred.; prereq. Draw. 3 or equiv.)				
	Lect.	VI	M	303En	Mr. Otis
	Lab.	VII, VIII	M		
		2 hrs. ar.			

Junior and Senior Courses

51w	Soil Moisture Relations (5 cred.; jr. and sr. prof. agr. eng. only; prereq. 21 or parallel, Soils 9, M.&M. 129) (Offered only in even numbered years. Not offered in 1942-43)				
52f	Elements of Farm Machinery (3 cred.; prof. agr. eng. only; prereq. M.&M. 26)				
	Lect.	VI	TTh	216En	Mr. Schwantes
	Lab.	VII, VIII, IX	Th	49En	
53s	Farm Structures (3 cred.; prof. agr. eng. only; prereq. 5, Draw. 3 or equiv.)				
	Lect.	II	TS	305En	Mr. White
	Lab.	III, IV	TS	305En	
67f	Advanced Farm Structures Design (3 cred.; prof. agr. eng. only; prereq. 5, 53, M.&M. 128)				
	Lect.	I	T	305En	Mr. White,
	Lab.	I, II	TThS	305En	Mr. Otis
		II	T	305En	
70f	Dairy Engineering (3 cred.; jr., sr.; prereq. 24)				
	I		MWF	105En	Mr. Strait
71f	Design and Economics of Agricultural Machinery (3 cred.; prof. agr. eng. only; prereq. 18, 52, M.E. 27)				
	Lect.	VI	M	105En	Mr. Schwantes
		VII	F		
	Lab.	VII, VIII, IX	M	49,105En	Mr. Strait
72s	Applied Electricity (3 cred.; jr., sr. prof. agr. eng. only; prereq. Phys. 9, or 43, 44) (Offered only in even numbered years. Alternates with Agr. Eng. 73) (Not offered in 1942-43)				
73s	Steam Boilers and Heat Engines (3 cred.; prof. agr. eng. only; prereq. 18 and M.E. 31) (Offered only in odd numbered years. Alternates with Agr. Eng. 72). (Offered in 1942-43)				
	Lect.	III	MF	216En	Mr. Strait
	Lab.	VI, VII, VIII, IX	W	37En	

‡ A course fee of \$3 per quarter is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
101f,102w,103s	Advanced Problems in Soil Moisture Regulation (2 to 6 cred. per qtr.; sr.; prereq. 51)	Ar	Ar	Ar	Mr. Roe, Mr. Manson, Mr. Park
104f	The Soil Moisture Relation in Agriculture (3 cred.; not open to engineers; prereq. 9 cred. in agr. eng. including phys.)	Ar	Ar	105En	Mr. Roe
111f,112w,113s	Farm Building Problems (2 to 6 cred. per qtr.; sr.; prereq. 67)	Ar	Ar	305En	Mr. White, Mr. Christopherson, Mr. Otis
114w	Buildings, Equipment, Materials and Methods of Construction (3 cred.; not open to engineers; prereq. 9 cred. in agr. eng. including Agr. Eng. 3 and 4 or equiv.)	Ar	Ar	305En	Mr. White, Mr. Christopherson, Mr. Otis
121f,122w,123s	Farm Power and Machinery Problems (2 to 6 cred. per qtr.; jr., sr.; prereq. 126)	Ar	Ar	Ar	Mr. Schwantes, Mr. Hustrulid
124s	Agricultural Machinery and Mechanical Power Management (3 cred.; not open to engineers; prereq. 9 cred. in agr. eng. including phys. and Agr. Eng. 12)	Ar	Ar	105En	Mr. Schwantes
126w	Selection and Management of Agricultural Machinery (3 cred.; jr., sr.; prereq. 18, 71, Agr. Econ. 102)	III	MW	105En	Mr. Schwantes
	Lect.	III			
	Lab.	3 hrs. ar.			

AGRONOMY AND PLANT GENETICS

Freshman and Sophomore Courses

1f,s	General Farm Crops (3 cred.; no prereq.)	IV	MWF	202Ag	Mr. Wilson
21w	Grain Crops (4 cred.; soph., jr., sr.; prereq. 1)	VI	MWF	202Ag	Mr. Wilson
	Lect.	VI			
	Lab.	VII	MWF	104Ag	Mr. Wilson
22s	Grain and Hay Grading (3 cred.; soph., jr., sr.; prereq. 1)	I, II	MWF	201Ag	Mr. Schmid
23f	Forage Crops (4 cred.; soph., jr., sr.; prereq. 1)	VI, VII	MWF	202Ag	Mr. Arny
31f,w	Principles of Genetics (4 cred.; soph., jr., sr.)	I	TThS	202Ag	Mr. Immer
	Lect.	I			
	Lab.	Ar	Ar	Ar	Mr. Henderson, Mr. Kramer

Junior and Senior Courses

124s	Problems in Farm Crops (3 cred.; jr., sr.; prereq. 1, 31, and at least two courses from 21, 23, 132, 134. Seniors and special students may register in course with approval of instructor)	III	MWF	101Ag	Mr. Wilson
126f	Crop Judging (4 cred.; jr., sr.; prereq. 22)	VI, VII	MWF	201Ag	Mr. Wilson, Mr. Schmid
132w	Farm Crops Plant Breeding (4 cred.; jr., sr.; prereq. 31)	VI, VII, VIII	TTh	101Ag	Mr. Hayes, Mr. Rinke
133s	Pasture Crops and Management (4 cred.; jr., sr.; prereq. 23)	VI, VII	MWF	202Ag	Mr. Arny
134s	Seminar in Agronomy (2 cred.; sr.; prereq. 9 cred.)	Ar	Ar	408Ag	Staff

ANIMAL AND POULTRY HUSBANDRY

ANIMAL HUSBANDRY

Freshman and Sophomore Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f,w,s	Livestock Production (4 cred.; no prereq.) (Limited to 65)	I, II (f,s)	MWF	CSt	Mr. Sierk
		I, II (w)	TThS	CSt	Mr. Harvey
3f-4w	Breeds of Livestock (6 cred.; soph., jr., sr.; prereq. 1)	III, IV	TS	WSt	Mr. Peters,
		III	Th		Mr. Ferrin,
5s	Livestock Judging (3 cred.; soph., jr., sr.; prereq. 3-4)	III, IV	MWF	CSt	Mr. Harvey

Junior and Senior Courses

51w	Meat Selection (3 cred.; jr., sr.; prereq. 1)	VI, VII, VIII	WF	MSh	Mr. Anderson	
52s		Meats (3 cred.; jr., sr.; prereq. 1, 51)	VI, VII, VIII	TTh	MSh	Mr. Anderson
53f	Advanced Meats (3 cred.; jr., sr.; prereq. 52)	VI, VII, VIII	TTh	MSh	Mr. Anderson	
54w		Utilization of Meats (3 cred.; jr., sr. home econ. students; no prereq.)	III	ThS	MSh	Mr. Anderson
56f-57w	Livestock Feeding (6 cred.; jr., sr.; prereq. 1)	III, IV	T			
		III	MWF	3St	Mr. Ferrin	
58f	Market Classes and Marketing of Livestock (3 cred.; jr., sr.; prereq. 3-4)	II	TThS	3St	Mr. Peters	
101f		Advanced Stock Judging (3 cred.; jr., sr.; prereq. 5)	VI, VII	MWF	CSt	Mr. Harvey
107s	Meat Problems (3 cred.; jr., sr.; prereq. 53)	IV	TS	MSh	Mr. Anderson	
		Lab.	VI, VII, VIII	F	MSh	
108s		Seminar (3 cred.; jr., sr.; prereq. 3-4)	II	TThS	3St	Mr. Peters
112w	Animal Breeding (3 cred.; jr., sr.; prereq. Agron. 31)	IV	MWF	3St	Mr. Winters	
113s		Livestock Management (3 cred.; jr., sr.; prereq. 3-4)	III	MWF	3St	Mr. Peters
116f	Embryology of Farm Animals (3 cred.; jr., sr., grad.; prereq. 112 or equiv. and approval of instructor)	IV	MWF	3St	Mr. Green	

POULTRY HUSBANDRY

Freshman and Sophomore Courses

1w	Poultry Production (4 cred.; soph.; no prereq.)	IV	MTWF	102Ve	Mr. Sloan
2w		Poultry Breeds, Varieties, and Culling (3 cred.; prereq. 1 or parallel)	VII, VIII	TTh	102Ve	Mr. Canfield

Junior and Senior Courses

50f,w,s	Poultry Problems (2 to 6 cred.; jr., sr.; prereq. 6 cred. in poultry husb.)	Ar	Ar	Ar	Mr. Sloan
51s		Incubation, Brooding, and Breeding (4 cred.; jr., sr.; prereq. 1, Agron. 31)	III	MWF	102Ve	Mr. Canfield
52f	Poultry Judging and Marketing (3 cred.; jr., sr.; prereq. 2)	1 hr. ar.			
		VII, VIII	TTh	102Ve	Mr. Canfield
103f	Poultry Feeding and Management (4 cred.; jr., sr.; prereq. 1, Agr. Biochem. 4)	IV	MTWF	103Ve	Mr. Sloan
104f		Seminar (2 cred.; sr.; prereq. 9 cred. in poultry husb. including 51s, 103f or equiv.)	Ar	Ar	Ar	Mr. Sloan

DAIRY HUSBANDRY

Freshman and Sophomore Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f,s	Elements of Dairying (3 cred.; prereq. entrance cred. in chem. or Inorg. Chem. 1 or 9) (Limited to 90)	III	MWF	100HH	Mr. Combs
2w	Dairy Bacteriology (3 or 5 cred.; 3 cred. for lect., 2 cred. for lab.; soph., jr., sr.; prereq. Bact. 53) (Lecture taken separately only on permission of instructor)				
	Lect.	VI	MWF	210HH	Mr. Macy
	Lab.	VII-VIII	MWF	212HH	Mr. Maack
3f	Testing Dairy Products (2 cred.; prereq. 1)	VII, VIII	MW	210HH	Mr. Maack
4s	Dairy Products Practice (3 cred.; soph., jr., sr.; prereq. 1)	Ar	Ar	Ar	Mr. Combs
9s	Dairy Cattle Judging (1 cred.; soph., jr., sr.; no prereq.)	VI, VII, VIII	F	DB	Mr. Allen
10s	Dairy Products Judging (1 cred.; soph., jr., sr.; prereq. 1)	Ar	Ar	20HH	Mr. Coulter
20s	Household Microbiology (4 cred.; 3rd qtr. fresh., soph., jr., sr.; prereq. approval of adviser and permission of instructor)	VI	MF	100HH	Mr. Macy
		VI, VII	W		

Junior and Senior Courses

51s	Market Milk (3 cred.; jr., sr.; prereq. 1, 2)	IV	MW	210HH	Mr. Macy
		VI, VII, VIII	Th		
101f	Milk Production (5 cred.; jr., sr.; prereq. 1)	IV	MTWFS	210HH	Mr. Fitch
103w	Dairy Stock Feeding (3 cred.; sr.; prereq. 101, An. Husb. 56)	II	TThS	312HH	Mr. Fitch
104f	Dairy Stock Selection (2 cred.; jr., sr.; prereq. 9, 101 or parallel)	VI	TTh	210HH	Mr. Allen
105f	Seminar I (1 cred.; sr.; prereq. 3 courses in dairy husb.)	II	S	214HH	Mr. Macy
106w	Seminar II (1 cred.; sr.; prereq. 105)	II	S	214HH	Mr. Macy
110w	Dairy Products: Ice Cream and Frozen Desserts (3 cred.; jr., sr.; prereq. 1, 3)	IV	TS	210HH	Mr. Combs,
		VI, VII, VIII	T		Mr. Coulter
111f	Dairy Products: Butter (3 cred.; jr., sr.; prereq. 1, 2, 3)	VI	MW	210HH	Mr. Combs,
		VI, VII, VIII	F		Mr. Coulter
112s	Dairy Products: Cheese (3 cred.; jr., sr.; prereq. 1, 2, 3)	IV	TS	210HH	Mr. Combs
		VI, VII, VIII	T	210HH	Mr. Coulter
113s	Technical Control (3 cred.; sr.; prereq. 2, 111 or 112)	I, II, III	TTh	102HH	Mr. Coulter,
					Mr. Maack
114w	Milk By-Products (3 cred.; jr., sr.; prereq. 1, 3)	I	TTh	210HH	Mr. Coulter
		VI, VII, VIII	TTh	24HH	
115s	Advanced Dairy Bacteriology (3 cred.; sr.; prereq. 2, 111 or 112)	I, II	MWF	212HH	Mr. Macy
116s	Milk Secretion (3 cred.; sr.; prereq. physiol. 9 cred. and Agr. Biochem. 103)	I	MWF	214HH	Mr. Petersen
117s	Dairy Cattle Breeding (3 cred.; jr., sr.; prereq. 101, 104, Agron. 31)	Ar	Ar	Ar	Mr. Petersen

For course in Dairy Chemistry see Agricultural Biochemistry 103, page 141.

ENTOMOLOGY AND ECONOMIC ZOOLOGY

Freshman and Sophomore Courses

No.	Title	Hour	Day	Bldg.	Instructor
5f,w	Economic Entomology (5 cred.; soph., jr., sr.; prereq. Zool. 14-15 or equiv.) (Section limited to 36)				
		VI, VII, VIII	MWF	301,302Ad	Mr. Ruggles
5s	Economic Entomology (5 cred.; soph., jr., sr.; prereq. Zool. 14-15 or equiv.) (Section limited to 36)				
		VI, VII, VIII	MWF	301,302Ad	Mr. Ruggles
13su	Field Zoology (1 cred.; no prereq.)	Given at Itasca Park			Mr. Mickel
14f,s-15w-16s	Principles of Beekeeping (2 to 6 cred.; no prereq.)				
	14f-15w-16s	IV	MF	307Ad	Mr. Tanquary
	14s	III	MF		
17f,s-18w-19s	Beekeeping Practice (1 to 3 cred.; prereq. 14-15 or parallel)				
		II, III, IV	W	307Ad	Mr. Tanquary, Mr. Haydak
20f,w,s	Advanced Beekeeping (2 to 6 cred.; prereq. 14 to 19 and 5 cred. in ent.)				
		Ar	Ar	Ar	Mr. Tanquary

Junior and Senior Courses

51f*‡§	Introductory Parasitology (5 cred.; jr., sr.; prereq. Zool. 14-15 or equiv.) (Sections limited. Written permission must be obtained from the Junior College office, 106 Folwell Hall)				
		VI, VII, VIII	MWF	208Z	Mr. Riley
52w*‡§	Introductory Entomology (5 cred.; jr., sr.; prereq. Zool. 14-15 or equiv.) (Laboratory limited to 26)				
	Lect.	VI	MWF	211Z	Mr. Mickel
	Lab.	VII, VIII	MWF	402Z	
55f,su	Entomological Techniques (9 hrs. lab.; 3 cred.; jr., sr.; ar.)				Mr. Mickel
56w	Forest Entomology (5 cred.; jr., sr.; prereq. Zool. 14-15 or equiv.)				
		VI, VII, VIII	MWF	307Ad	Mr. Hodson
61s	Forest Zoology (3 cred.; jr., sr.; prereq. Zool. 1-2-3)				
		Given at Cloquet			Mr. Quimby
62su	Wildlife Conservation Principles and Administration (3 cred.; jr., sr.; prereq. Zool. 1-2-3 or equiv.)				
		Given at Itasca Park			Mr. Swanson
64w	Economic Vertebrate Zoology (3 cred.; jr., sr.; prereq. Zool. 1-2-3)				
		I	MWF	301Ad	Mr. Swanson
114s	Apiculture (3 cred.; jr., sr.; prereq. 9 cred. in ent.)				
		I	MW	307Ad	Mr. Tanquary, Mr. Haydak
117f*‡-118w‡-119s*‡	Animal Ecology (9 cred.; jr., sr.; prereq. 15 cred. in zool. or ent.)				
		VI, VII, VIII	TTh	211Z(f,s)	Mr. Eddy,
				301AdUF(w)	Mr. Hodson
120s	General Ecology of Insects (3 cred.; jr., sr.; alternative to 119s, or both may be taken; prereq. 117f-118w)				
		VI, VII, VIII	TTh	307Ad	Mr. Hodson
125f‡-126w‡-127s*‡	Advanced General Entomology (9 cred.; jr., sr.; prereq. 15 cred. in zool. or ent.)				
	Lect.	I	TTh	211Z	Mr. Mickel
	Lab.	I, II, III	S	402Z	
141f-142w	Insects in Relation to Plant Diseases (6 cred.; jr., sr.; prereq. 8 cred. in ent. or plant path.)				
		I, II	MWF	302Ad	Mr. J. J. Christensen, Mr. Granovsky

* Offered on the Minneapolis campus.

‡ A fee of \$1 per quarter is charged for this course.

§ Open to sophomores on petition.

¶ Note that in the winter quarter this course is offered at the University Farm.

No.	Title	Hour	Day	Bldg.	Instructor
144f†-145w†- 146s*‡	Animal Parasites and Parasitism (3 to 9 cred.; jr., sr.; prereq. Zool. 9 cred.)	VI, VII, VIII	WF	208Z	Mr. Riley
150s	Introduction to Aphidology (3 cred.)	Ar	Ar	Ar	Mr. Granovsky
161f	Waterfowl and Upland Game Birds (3 cred.; jr., sr.; prereq. Zool. 46-47 or equiv.)	III, IV III	TS Th	301Ad	Mr. Swanson
163f	Mammalogy (3 or 4§ cred.; jr., sr.; prereq. Zool. 22)	IV	MWF	301Ad	Mr. Quimby
165w	Game Management (3 cred.; jr., sr.; prereq. 62, 64, 163)	I	TThS	307Ad	Mr. Swanson
166s	Methods in Field Zoology (3 cred.; jr., sr.; prereq. 163, 165)	VI, VII, VIII	TTh	301Ad	Mr. Swanson
175f	Insecticides and Their Action (4 cred.; sr.; prereq. inorg. and org. chem.)	III	MWF	302Ad	Mr. Shepard
176w	Advanced Economic Entomology (3 cred.; sr.; prereq. 5 or 56, Zool. 117-118-119 or equiv.)	III	MWF	302Ad	Mr. Ruggles
197f,w,s,su	Introduction to Research (5 or more cred.; sr.; prereq. work as prescribed by the division)	Ar	Ar	Ar	Mr. Riley, Mr. Mickel, Mr. Ruggles, Mr. Tanquary, Mr. Granovsky, Mr. Hodson, Mr. Shepard, Mr. Swanson

FORESTRY

Freshman and Sophomore Courses

1f	General Forestry (3 cred.; no prereq.)	III	TThS	100GH	Mr. Cheyney
2su	Field Dendrology (1 cred.; no prereq.)	Given at Itasca Park			Mr. Benseid
3w	Dendrology (3 cred.; no prereq.)	III	TThS	100GH	Mr. Schmitz
4s	Dendrology (4 cred.; no prereq.)	II	MWF	100GH	Mr. Schmitz
	Lect.	VI-VII-VIII	T	Ar	Mr. Rees
	Lab. Sec. 1	VI-VII-VIII	Th	Ar	Mr. Rees
	2				
5su	Field Silviculture (2 cred.; no prereq.)	Given at Itasca Park			Mr. Cheyney
6su	Field Mensuration (2 cred.; no prereq.)	Given at Itasca Park			Mr. Brown
7f-8w-9s	Forest Mensuration (9 cred.; all; prereq. 6, Math. 1 and 6)	IV	MW	100GH	Mr. Brown
	Lect.	VI, VII, VIII	M	206GH	
	Lab. Sec. 1	II, III, IV	S	206GH	
	2				
10w	Farm Forestry (3 cred.; not open to students majoring in forestry; no prereq.)	VI	MWF	100GH	Mr. Benseid
11su	Camp Management (1 cred.; no prereq.)	Given at Itasca Park			Mr. Brown
20w	Grazing (3 cred.; soph., jr., sr.; no prereq.)	II	TThS	203GH	Mr. Allison
49s	House and Furniture Woods (2 cred.; soph., jr., sr.; not open to students majoring in forestry; no prereq.)	III, IV	TS	211GH	Mr. Rees

* Offered on the Minneapolis campus.

† A fee of \$1 per quarter is charged for this course.

‡ Three hours of laboratory work may be elected in order to receive four credits.

Junior and Senior Courses

No.	Title	Hour	Day	Bldg.	Instructor
53f-54w	Wood Structure and Identification (6 cred.; jr., sr.; prereq. 3, 4)	VI, VII, VIII	WF	211GH	Mr. Rees
56s	Forest Products (3 cred.; jr., sr.; no prereq.)	V	MWF	203GH	Mr. Kaufert
57f	Wood Utilization (3 cred.; sr.; prereq. 53-54)	II	MWF	203GH	Mr. Kaufert
58w	Lumber Merchandising and Grading (3 cred.; sr.; prereq. 53-54)	III	TThS	201GH	Mr. Kaufert
101w	Advanced Dendrology (3 cred.; jr., sr.; prereq. 3, 4)	Ar	Ar	Ar	Mr. Rees
111f-112w					
111w-112s	Advanced Forest Mensuration (6 cred.; sr.; prereq. 9)				
	Lect. } 111f,w	VI, VII, VIII, IX	T	206GH	Mr. Brown
	Lab. } 112w,s	VI, VII, VIII, IX	Th	206GH	
113f	Wood Pulp and Paper (3 cred.; jr., sr.)	III	MWF	201GH	Mr. Kaufert
114f	Mechanical and Physical Properties of Wood (3 cred.; jr., sr.; prereq. 53-54, Math. 7)	I	TThS	201GH	Mr. Rees
115w-116s	Mechanical and Physical Properties of Wood (6 cred.; jr., sr.; prereq. 114)				
	115w	I, II	TThS	3GH	Mr. Rees
	116s	I, II	MWF	3GH	Mr. Rees
119s	Advanced Wood Structure I (4 cred.; sr.; prereq. 53-54)				
	Lect.	IX	M	209GH	Mr. Kaufert
	Lab.	VI, VII, VIII	MWF	209GH	
125s	Wood Preservation (3 cred.; jr., sr.; prereq. 53-54)	III	MWF	201GH	Mr. Kaufert
126f	Silvics (3 cred.; postgrad.; no prereq.)	III	MWF	203GH	Mr. Cheyney
127w	Silviculture (3 cred.; postgrad.)	II	MWF	203GH	Mr. Cheyney
128s	Silviculture Laboratory (6 cred.; sr.)	Given at Cloquet			Mr. Cheyney
129f,w,s	American Silvicultural Practice (3 cred.; postgrad.; prereq. 126 and 127)	Ar	Ar	Ar	Mr. Cheyney
130f	Forest Valuation (5 cred.; postgrad.)	I	MTWThF	203GH	Mr. Allison
131w	Forest Policy and Administration (5 cred.; postgrad.)	IV	MTWFS	203GH	Mr. Allison
132s	Forest Regulation Laboratory (6 cred.; sr.)	Given at Cloquet			Mr. Allison
136f	Forest Economics (3 cred.; jr., sr.; prereq. Agr. Econ. 2)	II	MWF	201GH	Mr. Allison
137w	Seeding and Planting (3 cred.; jr., sr.)	III	TThS	203GH	Mr. Cheyney
140f	Forest Working Plans (3 cred.; postgrad.; prereq. 128, 132)	III	TThS	201GH	Mr. Allison
141w	Principles of Silvics (3 cred.; postgrad.; prereq. 126)	III	MWF	Ar	Mr. Cheyney
142s	Wood Chemistry (3 cred.; jr., sr.; prereq. Org. Chem. 52)	II	MWF	201GH	Mr. Kaufert
143f	Forest Recreation (3 cred.; jr., sr.)	IV	MWF	201GH	Mr. Cheyney
144s	Forage and Browse Plants (3 cred.; jr., sr., grad.; prereq. Bot. 113 and P.P. 7)	Ar	Ar	Ar	Mr. Bendsend
151f,w	Logging (3 cred.; jr., sr.)	IV	MWF	203GH(f)	Mr. Weinstein
				201GH(w)	
152s	Wood Seasoning (3 cred.; jr., sr.; prereq. 53-54)	I	TThS	201GH	Mr. Rees
155w	Forest Protection (3 cred.; jr., sr.)	III	MWF	203GH	Mr. Weinstein

No.	Title	Hour	Day	Bldg.	Instructor
220-221-222	Major Report (2 cred. per qtr.; grad.) (Not offered)				
223f-224w-225s	Literature Seminar (1 cred. per qtr.; grad.)	4:00-6:00 p.m.	W	209GH	Mr. Schmitz

HOME ECONOMICS

Courses offered by the Department of Home Economics are open to students registered in colleges on the Minneapolis campus as indicated below: Home Economics 1, 2, 15, 20, 30, 31, 34, 56A-56B, 120, provided student reports on his registration dates to Room 106, Folwell Hall, for permission. The number of permissions which can be given is limited. For the convenience of students on the Minneapolis campus, a tally is kept in Room 106, Folwell Hall.

Home Economics 3, 4, 21, 22, 23, 24, 25, 26, 40, 50, 53, 55, 61, 64, 75, 85, 102, 107, 115, 121, 122, 125, 170, 171, 173, 179, 180, 185, 186 are open provided student reports to the office of admissions and records, Room 203d, Administration Building, University Farm, for permission on the following registration dates: September 24-25 for fall, January 4 for winter, and March 26-27 for spring quarter.

Other courses are not open to Minneapolis campus students. Students registered in the College of Science, Literature, and the Arts should read the statement about Home Economics courses on page 59 of this bulletin.

Freshman and Sophomore Courses

1f	Choice and Care of Clothing (4 cred.; fr.; not open to seniors; not open to students having had Gen. Coll. 15A; no prereq.) (Limited to 70 each)				
	Sec. 1	III	MTWTh	313HE	Miss Brew
	2	VI	MTWTh	203HE	Miss Birong
1w	Choice and Care of Clothing (Same as 1f) (Limited to 70)				
		III	MTWTh	313HE	Miss Brew
1s	Choice and Care of Clothing (Same as 1f) (Limited to 70)				
		II	MTWTh	313HE	Miss Brew
2f	Introduction to Textiles (3 cred.; for S.L.&A., Bus. Adm., and Art Ed.; no prereq. Written permission must be obtained from the Junior College office, 106 Folwell Hall) (Limited to 30)				
		VI, VII	MWF	307HE	Miss Phelps
3f	Clothing Construction A (3 cred.; soph.; 3rd qtr. fresh. with honor point ratio of 1.0; prereq. 1) (Sections limited to 24 each)				
	Sec. 1	VI, VII, VIII	TTh	305HE	Miss Gorham
	2	VI, VII	MWF	304HE	Miss Brew
3w	Clothing Construction A (Same as 3f) (Sections limited to 24 each)				
	Sec. 1	III, IV	MWF	304HE	Miss Birong
	2	VI, VII	MWF	304HE	Miss Brew
3s	Clothing Construction A (Same as 3f) (Sections limited to 24 each)				
	Sec. 1	I, II	MWF	304HE	Miss Birong
	2	VI, VII, VIII	TTh	304HE	Miss Birong
4f	Clothing Construction B (3 cred.; soph., jr.; prereq. 3, 20, and home practice in clothing construction) (Sections limited to 24 each)				
	Sec. 1	I, II	MWF	304HE	Miss Birong
	2	III, IV	MWF	304HE	Miss Birong
4w	Clothing Construction B (Same as 4f) (Sections limited to 24 each)				
	Sec. 1	I, II	MWF	304HE	Miss Birong
	2	VI, VII, VIII	TTh	305HE	Miss Gorham
4s	Clothing Construction B (Same as 4f) (Limited to 24)				
		III, IV	MWF	305HE	Miss Gorham
10f	Introduction to Home Economics (2 cred.; 1st qtr. fr. only; no prereq.)				
		IV	WF	203HE	Miss McNeal and others
15f	Personal Relationships (2 cred.; fr.; no prereq.) (Sections limited to 60 each)				
	Sec. 1 (Not open to fr.)	VI	TTh	213HE	Miss Jeary
	2 (For fr.)	VII	TTh	203HE	Miss Jeary

No.	Title	Hour	Day	Bldg.	Instructor
15w	Personal Relationships (Same as 15f)	(Limited to 60)			
		IV	MW	203HE	Miss Jeary
15s	Personal Relationships (Same as 15f)	(Sections limited to 60 each)			
	Sec. 1	IV	MW	213HE	Miss Jeary
	2	VI	TTh	203HE	Miss Jeary
20f,w	Introduction to Related Art (4 cred.; fr., not open to seniors; no prereq.)	(Limited to 60)			
		III	MTWTh	203HE	Miss V. Goldstein
20s	Introduction to Related Art (Same as 20f,w)	(Sections limited to 60 each)			
	Sec. 1	II	MTWTh	203HE	Miss Petersen
	2	IV	MTWF	203HE	Miss Petersen
21f	Color and Design I (3 cred.; prereq. 20)	(Sections limited to 24 each)			
	Sec. 1	I, II	MWF	402HE	Miss Petersen
	2	I, II	TThS	402HE	Miss Nyberg
	3	I, II	MWF	401HE	Miss Nyberg
21w	Color and Design I (Same as 21f)	(Sections limited to 24 each)			
	Sec. 1	VI, VII	MWF	402HE	Miss Nyberg
	2	VI, VII, VIII	TTh	401HE	Miss Nyberg
21s	Color and Design I (Same as 21f)	(Limited to 24)			
		I, II	MWF	402HE	Miss Nyberg
22f	Color and Design II (3 cred.; all; prereq. 20)	(Limited to 24)			
		VI, VII	MWF	402HE	Miss Petersen
22w	Color and Design II (Same as 22f)	(Sections limited to 24 each)			
	Sec. 1	III, IV	MWF	402HE	Miss Petersen
	2	VI, VII, VIII	TTh	402HE	Miss Petersen
22s	Color and Design II (Same as 22f)	(Sections limited to 24 each)			
	Sec. 1	VI, VII	MWF	112HE	Miss Nyberg
	2	VI, VII, VIII	TTh	402HE	Miss Segolson
23w	Advanced Design (3 cred.; soph., jr.; prereq. 21)	(Limited to 24)			
		I, II	TTh	401HE	Miss Petersen
24s	Problems in Home Planning and Furnishing (5 cred.; soph.; prereq. 20)	(Limited to 24)			
	Sec. 1	III, IV	MTWF	402HE	Miss V. Goldstein
	2	VI, VII, VIII	MW	401HE	Miss Segolson
		VI, VII	F		
25s	Design Applied to Crafts (3 cred.; prereq. 21)	(Limited to 24)			
		III, IV	TS	110HE	Miss Nyberg
		III	Th		
30s*§	Introduction to Nutrition (2 cred.; not open to home econ. students; no prereq.)				
		VI	TTh	206Pt	Miss Biester
31f	Introduction to Nutrition (3 cred.; fr.; not open to seniors; no prereq.)	(Sections limited to 65 each)			
	Sec. 1	I	MWF	213HE	Miss Wismer
	2	II	MWF	213HE	Miss Biester
31w	Introduction to Nutrition (Same as 31f)	(Limited to 65)			
		IV	MWF	213HE	Miss Wismer
31s	Introduction to Nutrition (Same as 31f)	(Limited to 65)			
		VI	MWF	213HE	Miss Wismer
33f	Nutrition I (4 cred.; soph., jr., sr.; prereq. Agr. Biochem. 4, Physiol. 4)	(Limited to 24)			
	Lect.	III	MWF	211,	
				213HE	Miss Donelson
	Lab.	VI, VII, VIII	T		
34f	Nutrition Problems (4 cred.; 3rd. qtr. soph., jr., sr.; prereq. biol.)	(Limited to 75)			
		I	TWThF	203HE	Miss Biester
34s	Nutrition Problems (Same as 34f)	(Limited to 75)			
		IV	MTWF	204So	Miss Donelson

* Offered on the Minneapolis campus.

§ Intended for students in Science, Literature, and the Arts. Open to students in Home Economics only by special permission of chief of division.

No.	Title	Hour	Day	Bldg.	Instructor
40f,w,s	Food Preparation (5 cred.; not open to freshmen; prereq. 2 qtrs. chem.) (Sections limited to 24 each)				
	Sec. 1	I, II (f,w,s)	MTWThF	103HE	
	2	III, IV (f,w,s)	MTWThF	103HE	Miss Kercher
			Th		
	3	VI, VII (f,w)			
			MTWThF	103HE	Miss Kercher
41f	Food Management and Marketing (5 cred.; soph., jr., sr.; prereq. 31, 40) (Sections limited to 20 each)				
	Sec. 1	III, IV	MTWThF	207HE	Mrs. Ralston
		V	TW		
	2	VI, VII	MWThF	207HE	Miss Seiter
		VIII	MTh		
41w	Food Management and Marketing (Same as 41f) (Sections limited to 20 each)				
	Sec. 1	I, II	MTWThF	207HE	Mrs. Ralston
	2	III, IV	MTWThF	207HE	Miss Seiter
		V	TW		
	3	VI, VII	MWThF	207HE	Miss Ralston
		VIII	MTh		
41s	Food Management and Marketing (Same as 41f) (Sections limited to 20 each)				
	Secs. 1 and 2	III, IV	MTWThF	105HE	Miss Seiter
		V	TW		Miss Gilpin
	3 and 4	VII, VIII	MWThF	105HE	Mrs. Ralston
		IX	MTh	207HE	Miss Gilpin

Junior and Senior Courses

50f	Textiles (3 cred.; jr., sr.; prereq. 1) (Sections limited to 30 each)				
	Sec. 1	I, II	MWF	307HE	Miss Brew
	2	III, IV	MWF	307HE	Miss Gorham
50w	Textiles (Same as 50f) (Sections limited to 30 each)				
	Sec. 1	I, II	MWF	307HE	Miss Phelps
	2	III, IV	MWF	307HE	Miss Gorham
50s	Textiles (Same as 50f) (Limited to 30)				
		III, IV	MWF	307HE	Miss Birong
53f	Advanced Clothing (3 cred.; jr., sr.; prereq. 4, 22, 50) (Limited to 24)				
		VII, VIII	MWF	305HE	Miss Carlotta Brown, Miss Gorham
53w	Advanced Clothing (Same as 53f) (Limited to 24)				
		VII, VIII	MWF	305HE	Miss Carlotta Brown, Miss Gorham
53s	Advanced Clothing (Same as 53f) (Limited to 24) (Open only to home economics education majors, or by permission of instructor)				
		VII, VIII	MWF	305HE	Miss Carlotta Brown, Miss Gorham
54s	Problems in Clothing Construction (3 cred.; jr., sr.; prereq. 53 or permission of instructor)				
		VI, VII, VIII	TTh	305HE	Miss Gorham
55f	Related Art Problems (3 cred.; jr., sr.; prereq. 21) (Limited to 24)				
		I, II	TThS	401HE	Miss Petersen
55w	Related Art Problems (Same as 55f) (Limited to 24)				
	Sec. 1	I, II	MWF	401HE	Miss V. Goldstein
	2	VI, VII	MWF	402HE	Miss H. Goldstein
55s	Related Art Problems (Same as 55f) (Limited to 24)				
		I, II	MWF	401HE	Miss Segolson

No.	Title	Hour	Day	Bldg.	Instructor
56Af-56Bs	Applications of Color and Design (3 cred. each; not open to home econ. students; no prereq.; courses must be taken in the sequence indicated. Written permission must be obtained from the Junior College office, 106 Folwell Hall) (Limited to 24)				
	56Af	VI, VII, VIII	TTh	401HE	Miss V. Goldstein
	56Bs	VI, VII	MWF	402HE	Miss H. Goldstein
61f	Quantity Cookery (4 cred.; jr., sr.; prereq. 40) (Limited to 12)				
	Lect.	I		S 313HE	Mrs. Ofelt
	Lab.	I, II, III	TTh	DH	Mrs. Ofelt
61w,s	Quantity Cookery (Same as 61f) (Winter sections limited to 12 each; Sec. 1, spring, limited to 8; Sec. 2, spring, limited to 12)				
	Sec. 1 Lect.	VI (s)		F 106HE	
	Lab.	VI, VII, VIII	MW	DH	
	2 Lect.	I (w,s)		S 313HE	Mrs. Ofelt
	Lab.	I, II, III	TTh	DH	Mrs. Ofelt
62f,w,s	Institution Experience (3 cred.; jr., sr.; prereq. 40) (Sections limited to 10 each)				
	Lect.	IV		W DH	Miss Dunning
	Lab. Sec. 1	IV, V		MF	
	2	IV, V		TTh	
64f	Institution Buying (4 cred.; jr., sr.; prereq. 61 and 63—may parallel 61 and 64, or 62 and 64)				
	Lect.	I		MWF 313HE	Mrs. Ofelt
	Lab.	VI, VII, VIII		F	
70	<i>Advanced Food Preparation</i> (3 cred.; prereq. Agr. Biochem. 4, H.E. 40) (<i>Not offered</i>)				
71s	Demonstrations (1 cred.; open to 3rd qtr. jr., sr.; prereq. 41)				
		VI, VII, VIII	T	107HE	Miss Seiter
75f	Dietetics Laboratory (2 cred.; jr., sr.; prereq. 34 or 170) (Limited to 20)				
		I, II	TTh	107HE	Miss Wismer
75w	Dietetics Laboratory (Same as 75f) (Sections limited to 20)				
	Sec. 1	I, II		MW 107HE	Miss Wismer
	2	I, II		TTh 107HE	Miss Wismer
76f*	Nutrition (3 cred.; not open to home econ. students; for nursing students only; prereq. permission of instructor)				
		III		TThS 200Pt	Miss Donelson
79s	Selected Problems for Dietitians (3 cred.; jr., sr.; prereq. 170 or equiv.)				
		II		MWF 213HE	Ar
84f,w,s	Junior-Senior Problems (2 cred.; prereq. permission of instructor under whom student wishes to work)				
				Ar Ar Ar	Staff
85f,w	Home Management: Operation and Maintenance, Lectures (3 cred.; jr., sr.; prereq. 40, H.E.Ed. 90 or C.W. 40 ar parallel)				
		VIII		MWF 203HE	Miss Studley, Miss Jeary
86f,w,s§	Home Management: Operation and Maintenance, Laboratory (4 cred.; jr., sr.; prereq. 85 or parallel, 40, 185 parallel, H.E.Ed. 90 or C.W. 40) (Sections limited to 14 each)				
	Sec. 1 1st half of quarter	I and		S Home	Miss Studley
	2 2nd half of quarter	other hours		Mgt. House	Miss Jeary
98w	Home Economics Extension (3 cred.; sr.; sr.; prereq. H.E.Ed. 91 or parallel)				
		V		MW 213HE	Miss Newton, Miss Krost, and others
		Anyone taking this course must plan to spend 4 full days in the field			
102f,s	Advanced Textiles (3 cred.; jr., sr.; prereq. 50, Agr. Biochem. 4, Agr. Econ. 3 or parallel) (Limited to 16)				
		VI, VII, VIII	TTh	307, 311HE	Miss Phelps
107w	Textile Analysis (3 cred.; jr., sr.; prereq. 102, Agr. Biochem. 2)				
		VI, VII, VIII	MWF	311HE	Miss Phelps

* Offered on the Minneapolis campus.

§ Students who register for H.E. 86, Section 1, will take H.E. 185 the last half of the quarter, and students who register for H.E. 86, Section 2, will take H.E. 185 the first half of the quarter.

AGRICULTURE, FORESTRY, AND HOME ECONOMICS

No.	Title	Hour	Day	Bldg.	Instructor
115s	Economic and Social Aspects of Clothing (3 cred.; jr., sr.; prereq. 50, Agr. Econ. 3)	VIII	MWF	213HE	Miss Brew
120f,w,s	Art History and Appreciation (3 cred.; open to Senior College and grad. students only)	VIII	MWF	313HE	Miss H. Goldstein, Miss V. Goldstein
121s	Textile Design (3 cred.; jr., sr.; prereq. 50, 55 (Limited to 24)	VI, VII, VIII	TTh	401HE	Miss Petersen
122s	Advanced Interior Design (3 cred.; jr., sr.; prereq. 180 or parallel, 120 or permission of instructor) (Limited to 20)	I, II	TThS	401HE	Miss V. Goldstein
125w	Advanced Costume Design (3 cred.; jr., sr.; prereq. 4 or permission of instructor, 22; 26 recommended) (Limited to 20)	I, II	TThS	402HE	Miss Nyberg
142f	Experimental Cookery (3 cred.; jr., sr.; prereq. 40, Agr. Biochem. 4) (Sec. 1 limited to 12; Sec. 2 limited to 8)				
	Sec. 1	VI, VII, VIII	MW	107HE	Miss Seiter
	2	VI, VII, VIII	TTh	107HE	Miss Noble
142s	Experimental Cookery (Same as 142f) (Limited to 12; not open to grad. stud.)	I, II, III	TTh	107HE	Mrs. Ralston
146s	Special Food Problems (3 cred.; sr.; prereq. 142)	VI, VII, VIII	MW	107HE	Miss Seiter
163s	Institution Management Problems (3 cred.; sr.; prereq. 61, 62, 64)				
	Lect.	III	ThS	313HE	Miss Dunning
	Lab.	III, IV	T	DH	
170f	Nutrition of the Family (3 cred.; jr., sr.; prereq. 31, 40, Agr. Biochem. 4, Physiol. 3 cred.) (Limited to 40)	II	MWF	106HE	Miss Leichsenring
170w	Nutrition of the Family (Same as 170f) (Limited to 40)	I	MWF	313HE	Miss Biester
171w,s	Child Nutrition (3 cred.; jr., sr.; prereq. 170, H.E.Ed. 90 or C.W. 40) (Limited to 30)				
	Lect.	III	MW	213HE	Miss Leichsenring
	Lab.	III*	F	Ar	
		IV	Ar before completing registration		
173s	Nutrition in Disease (3 cred.; jr., sr.; prereq. 170; 175 also advised)	I	MWF	213HE	Miss Wismer
175w	Nutrition II (4 cred.; jr., sr.; prereq. 33) (Each lab. section limited to 24)				
	Lect.	II	MWF	106HE	Miss Donelson
	Lab.	VI, VII, VIII	T	211HE	
176w	Advanced Nutrition (4 cred.; jr., sr.; prereq. 175 or parallel, Agr. Biochem. 2) (Limited to 12)				
		II, III, IV	TS	307HE	Miss Biester
		II, III	Th	311HE	
177s	Digestion of Metabolism (3 cred.; jr., sr.; prereq. 175) (Limited to 15)	VI, VII, VIII	TTh	313HE	Miss Leichsenring
178f,w,s	Clinical Problems in Nutrition (2 cred.; jr., sr.; prereq. 75 or parallel, 170, 175 or parallel) (Limited to 8) (See instructor before completing registration)				
	Lect.	V	M	313HE	Miss Wismer
	Lab.	V, VI, VII, VIII	Th	Ar	
179f	Readings in Nutrition (2 cred.; jr., sr.; prereq. 170) (Limited to 15)	III	TTh	213HE	Miss Leichsenring
179w	Readings in Nutrition (Same as 179f) (Limited to 15)	IV	MW	313HE	Miss Leichsenring
179s	Readings in Nutrition (Same as 179f) (Limited to 15)	I	TTh	213HE	Miss Donelson

No.	Title	Hour	Day	Bldg.	Instructor
180f,w,s	Home Planning and Furnishing (5 cred.; jr., sr.; prereq. 55; 120 recommended) (Limited to 24)	III, IV	MTWF	401HE	Miss H. Goldstein
185f,w§	Family Relationships (2 cred.; jr., sr.; prereq. 86 or parallel, H.E.Ed. 90 or C.W. 40)	VII	MTWF	213HE	Miss Studley, Miss Inman
185s	Family Relationships (Same as 185f,w)	VI	MTWF	114HE	Miss Studley, Miss Inman
186s	Problems in Income Management (3 cred.; prereq. 85 or parallel, 86, 170 or equiv., Agr. Econ. 126 or parallel)	VII	MWF	203HE	Miss Studley

HOME ECONOMICS EDUCATION

For list of courses in Home Economics Education see courses listed under the College of Education, page 128.

HORTICULTURE

Freshman and Sophomore Courses

6f	Fruit Growing (3 cred.; no prereq.)	II	MWF	102Hr	Mr. Brierley
10s	Home Floriculture (3 cred.; 2 cred only if Hort. 11 or 56 has been taken; no prereq.)	III	MWF	8Hr	Mr. Longley
	1 extra lab. hr. ar.				
11s	Garden Flowers (3 cred. [2 cred. if Course 10 has been taken]; prereq. Bot. 10 cred. or equiv.) (Offered in odd numbered years. Offered in 1942-43)	VI, VII, VIII	TTh	8Hr	Mr. Longley
12f	Commercial Floriculture, Fall Crops (3 cred.; prereq. Bot. 1 or equiv.)	VI, VII, VIII	T	8Hr	Mr. Longley
		VI, VII	Th		
14s	<i>Commercial Floriculture, Spring Crops.</i> (3 cred.; prereq. Bot. 1 or equiv.) (<i>Offered only in even numbered years. Not offered in 1942-43</i>)				
21f	Plant Materials, Fall and Winter Aspects (3 cred.; prereq. Bot. 10 cred. or equiv.)	VI, VII, VIII	MW	8aHr	Mr. Longley
22s	Plant Materials, Spring and Summer Aspects (3 cred.; prereq. Bot. 10 cred. or equiv.)	VI, VII, VIII	MW	8aHr	Mr. Longley
24f	Principles of Landscape Design (3 cred.; prereq. 21 or 22 or instructor's permission)	VI, VII, VIII	MF	107Hr	Mr. Phillips
25w	Principles of Planting Composition (3 cred.; prereq. 21 or 22 or instructor's permission)	VI, VII, VIII	MF	107Hr	Mr. Phillips
32s	Vegetable Growing (3 cred.; no prereq.)	II	MWF	102Hr	Mr. Krantz, Mr. Hutchins
40s	Horticulture Laboratory (2 cred.; soph., jr., sr.; prereq. 6 or instructor's permission)	VI, VII, VIII, IX	F	8Hr	Mr. Weir

Junior and Senior Courses

56w	<i>Plant Propagation</i> (3 cred. [2 cred. if Course 10 has been taken]; jr., sr.; prereq. Bot. 7 cred. or equiv.) (<i>Offered only in even numbered years. Not offered in 1942-43</i>)				
107f	Orchard Management (3 cred.; jr., sr.; prereq. 6) (Offered only in even numbered years. Offered in 1942-43)	III	TTh	106Hr	Mr. Brierley
		VI, VII	Th		
110w	Horticultural Crop Breeding (3 cred.; jr., sr.; prereq. Agron. 31)	III	TThS	302Hr	Mr. Wilcox

§ Students who register for H.E. 185, Section 1, will take H.E. 86 the last half of the quarter, and students who register for H.E. 185, Section 2, will take H.E. 86 the first half of the quarter.

No.	Title	Hour	Day	Bldg.	Instructor
111f	<i>Systematic Pomology</i> (3 cred.; jr., sr.; prereq. 6, Bot. 10 cred. or equiv.) (<i>Offered only in odd numbered years. Not offered in 1942-43</i>)	VI, VII, VIII	TTh	106Hr	Mr. Brierley
121w	Small Fruit Culture (3 cred.; jr., sr.; prereq. 6 or 32, Bot. 10 cred. or equiv.)	II	MWF	106Hr	Mr. Brierley
135f	Potatoes (3 cred.; jr., sr.; prereq. 32, Bot. 10 cred. or equiv.)	Ar	Ar	302Hr	Mr. Krantz
137w	Vegetable Crops (3 cred.; jr., sr.; prereq. 32, Bot. 10 cred. or equiv.)	Ar	Ar	302Hr	Mr. Hutchins
153w	Conservatory Plants and Florists' Flowers (3 cred.; jr., sr.; prereq. equiv.) (<i>Offered only in odd numbered years. Offered in 1942-43</i>)	VI, VII, VIII	T	8aHr	Mr. Longley
176s	Landscape Construction and Maintenance (3 cred.; sr.; prereq. 24 or 25 or instructor's permission) (<i>Offered only in odd numbered years. Offered in 1942-43</i>)	VI, VII	Th		
190f-191w-192s	Special Problems (2 to 4 cred. per qtr.; jr., sr.; prereq. instructor's permission)	VI, VII, VIII, IX	F	107Hr	Mr. Phillips
		1 hr. lect. ar.			
193f-194w	Horticultural Seminar (1 cred. per qtr.; sr.; prereq. Hort. 9 cred.)	Ar	Ar	Ar	Mr. Alderman and staff
		IX	W	106Hr	Horticultural staff

MUSIC

See Music Education, under College of Education, Course 43f-44w-45s, University Farm Music Ensembles—Vocal and Instrumental, page 134.

ORIENTATION

1f,w,s	Freshman Orientation Lectures (1 cred.) (Students must register for this course in their first quarter in college)	IV	T	(f)AudAd	Mr. Freeman, Mr. Harden
		VI	T	(w)107Bot(UF)	(s)Ar

PLANT PATHOLOGY AND BOTANY

Freshman and Sophomore Courses

1f	Plant Pathology (5 cred.; soph., jr., sr.; not open to students who have taken Course 10; prereq. 10 cred. in plant sciences of which at least 7 shall be in botany)	VII, VIII, IX	MWF	103,105PP	Mr. Tervet, Mr. Moore
1s	Plant Pathology (See 1f)	VII, VIII, IX	MWF	103,105PP	Mr. Tervet, Mr. Moore
7w	Grasses and Sedges (3 cred.; fr., soph., jr., sr.; prereq. Bot. 7 cred.)	III	TThS	106Bot(UF)	Mr. Larson
		IV	TS	106Bot(UF)	
8s	Weeds (3 cred.; fr., soph., jr., sr.; prereq. Bot. 7 cred.) (Each section limited to 40 students)	III	TTh	107Bot(UF)	Mr. Larson
	Sec. 1 Lect.	III, IV	S	106Bot(UF)	
	Lab.	IV	T	107Bot(UF)	
	Rec. and quiz	III	ThS	107Bot(UF)	
	2 Lect.	III, IV	T	106Bot(UF)	
	Lab.	IV	S	107Bot(UF)	
	Rec. and quiz	VI, VII, VIII	TTh	106Bot(UF)	Mr. Larson
9f	Weeds and Seed Testing (3 cred.; fr., soph., jr., sr.; prereq. Bot. 7 cred.)	VI, VII, VIII	TTh	106Bot(UF)	Mr. Larson

No.	Title	Hour	Day	Bldg.	Instructor
10w	Forest Pathology (5 cred.; soph., jr., sr.; not open to those who have completed Course 1; prereq. Bot. 9 cred.)	VII, VIII, IX	MWF	103,105PP	Mr. C. Christensen
10s	Forest Pathology (Same as 10w)	I I, II	MWF TThS	103PP 105PP	Mr. C. Christensen

Junior and Senior Courses

51f,w,s	Special Problems in Forest Pathology (2 to 5 cred.; jr., sr.; prereq. 10)	Ar	Ar	PP	Mr. C. Christensen
52w	Seed Problems (3 cred.; jr., sr.; prereq. 9)	Ar	Ar	106Bot(UF)	Mr. Larson
53s	Food Plants of Game Animals (3 cred.; jr., sr.; prereq. one yr. of bot. and one yr. of zool. or equiv.)	IV	MWF	106Bot(UF)	Mr. Larson
105f-106w-107s	Mycology (3 or 5 cred. per qtr.; jr., sr.; prereq. 1 or 10 or equiv.)	VI, VII, VIII	TTh	(f,w)110PP	Miss Dosdall
110w	Principles of Pathology (5 cred.; jr., sr.; prereq. 1 or 10, Bact. 53)	III, IV	MWF	104PP	Mr. Stakman, Mr. Eide
111w	Diseases of Field Crops (3 cred.; jr., sr.; prereq. 1 or 10)	VI, VII	MWF	107PP	Mr. J. J. Christensen ¹
112s	Diseases of Fruit and Vegetable Crops (3 cred.; jr., sr.; prereq. 1 or 10) (Offered only in odd numbered years. Offered in 1942-43)	III, IV	MWF	104PP	Mr. Eide, Mr. Sharvelle
114w	Advanced Forest Pathology (3 cred.; jr., sr.; prereq. 1 or 10)	Ar	Ar	104PP	Mr. C. Christensen
118f	Bacterial Diseases of Plants (3 cred.; jr., sr.; prereq. 1 or 10)	II, III	MWF	104PP	Mr. Eide
119s	Principles of Plant Disease Control (3 cred.; jr., sr.; prereq. 1 or 10)	VI, VII, VIII	TTh	104PP	Mr. Sharvelle, Mr. Moore
141f-142w	Insects in Relation to Plant Disease (6 cred.; jr., sr.; prereq. 8 cred. in ent. or plant path.)	I, II	MWF	302Ad	Mr. J. J. Christensen, Mr. Granovsky
143f	Methods (3 cred.; jr., sr.; prereq. 1 or 10)	Ar	Ar	104PP	Miss Hart, Mr. Moore
160f	Plant Histochemistry (3 cred.; sr.; prereq. bot. and elem. chem.)	Ar	Ar	Ar	Mr. Landon
161f	Transport, Storage, and Ripening of Fruits and Vegetables (3 cred.; sr.; prereq. Plant Physiol. 3 cred.)	Ar	Ar	Ar	Mr. Harvey
162w	Physiological Relations of Crop Plants to Temperature (3 cred.; sr.)	Ar	Ar	Ar	Mr. Harvey
163s	Applied Plant Physiology (3 cred.; jr., sr.; prereq. Plant Physiol. 3 cred., Chem. 5 cred.)	Ar	Ar	Ar	Mr. Landon

PUBLICATIONS AND RURAL JOURNALISM

53w	Publicity (3 cred.; jr., sr.; prereq. Rhet. 1, 2, 3)	I	TThS	302Hort	
-----	--	---	------	---------	--

For additional courses see under Journalism, College of Science, Literature, and the Arts, page 60.

RHETORIC

Freshman and Sophomore Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f	Rhetoric I (3 cred.; no prereq.) (Sections limited to 35 each)				
	Sec. 1	II	MWF	216En	Mr. Randel
	2	II	TThS	308En	Miss Thurston
	3	I	TThS	310En	Mr. Brown
	4	IV	MWF	312En	Mr. Drake
	5	III	MWF	308En	Miss Thurston
1w	Rhetoric I (Same as 1f) (Limited to 35)				
		I	MWF	310En	Mr. Brown
1s	Rhetoric I (Same as 1f)				
		II	TThS	306En	Mr. Randel
2f	Rhetoric II (3 cred.; prereq. 1 or exemption on basis of placement test) (Sections limited to 35 each)				
	Sec. 1	III	MWF	105En	Mr. Randel
	2	II	TThS	310En	Mr. Brown
2w	Rhetoric II (Same as 2f) (Sections limited to 35 each)				
	Sec. 1	II	MWF	310En	Mr. Drake
	2	II	TThS	310En	Mr. Brown
	3	III	MWF	310En	Mr. Randel
	4	I	MWF	307En	Mr. Randel
	5	II	MWF	216En	Mr. Randel
2s	Rhetoric II (Same as 2f) (Limited to 35)				
		IV	MWF	310En	Mr. Brown
3f	Rhetoric III (3 cred.; prereq. 2) (Limited to 35)				
		IV	MWF	308En	Mr. Randel
3w	Rhetoric III (Same as 3f) (Sections limited to 35 each)				
	Sec. 1	III	TThS	307En	Mr. Lansing
	2	IV	MWF	308En	Miss Thurston
	3	III	MWF	308En	Miss Thurston
3s	Rhetoric III (Same as 3f) (Sections limited to 35 each)				
	Sec. 1	II	MWF	310En	Mr. Brown
	2	III	MWF	306En	Mr. Randel
	3	I	MWF	311En	Mr. Drake
	4	III	TThS	306En	Mr. Randel
	5	II	TThS	307En	Mr. Lansing
11f	Argumentation (3 cred.; soph., jr., sr.; prereq. 3, 22 recommended) (Limited to 20)				
		II	MWF	307En	Mr. Lansing
11s	Argumentation (Same as 11f) (Limited to 30)				
		II	MWF	307En	Mr. Lansing
12f,w†	Debate and Discussion (3 cred.; soph., jr., sr.; prereq. 3, 22 recommended)				
		III	TThS	311En	Mr. Nichols
22f†	Public Speaking (3 cred.; soph., jr.; prereq. 3) (Sections limited to 20 each)				
	Sec. 1	IV	MWF	311En	Mr. Nichols
	2	III	MWF	311En	Mr. Nichols
	3	I	TThS	311En	Mr. Drake
	4	I	MWF	311En	Mr. Nichols
	5	II	MWF	311En	Mr. Drake
22w†	Public Speaking (Same as 22f) (Sections limited to 20 each)				
	Sec. 1	IV	MWF	311En	Mr. Drake
	2	II	MWF	311En	Mr. Nichols
	3	III	MWF	311En	Mr. Drake
	4	III	TThS	103En	Mr. Drake
	5	I	MWF	311En	Mr. Nichols
	6	I	TThS	311En	Mr. Nichols
22s†	Public Speaking (Same as 22f) (Sections limited to 20 each)				
	Sec. 1	III	MWF	311En	Mr. Drake
	2	II	TThS	311En	Mr. Nichols
	3	III	TThS	311En	Mr. Nichols
	4	II	MWF	312En	Mr. Drake

† A fee of \$1 per quarter is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
24s‡	Advanced Public Speaking (3 cred.; soph., jr., sr.; prereq. 22) (Limited to 20)	II	MWF	311En	Mr. Nichols
28f,s‡	Play Production (3 cred.; soph., jr., sr.; prereq. 3)	III	TThS	109HH(f)	Mr. Drake
		III	TThS	310En(s)	Mr. Drake
31f	Survey of English Literature I (5 cred.; soph., jr., sr.; prereq. 3 or permission of instructor) (Limited to 40)	III	MTWThF	307En	Mr. Lansing
31w	Survey of English Literature I (Same as 31f) (Limited to 40)	II	MTWThF	308En	Miss Thurston
31s	Survey of English Literature I (Same as 31f) (Limited to 40)	III	MTWThF	308En	Miss Thurston
32t	Survey of English Literature II (3 cred.; soph., jr., sr.; prereq. 3)	IV	MWF	310En	Mr. Brown
32s	Survey of English Literature II (Same as 32f) (Limited to 40)	III	TThS	310En	Mr. Brown
33f,w,s	American Life in American Literature (3 cred.; soph., jr., sr.; prereq. 3)	II	TThS	105En(fall)	Mr. Randel
		II	TThS	216En(winter)	Mr. Randel
		II	MWF	306En(spring)	Mr. Randel
34f,w,s	Books and Reading (1 cred.; no prereq.)	II	F	103En(fall)	Mr. Brown
	Sec. 1	III	F	217En(fall)	
	2	IV	F	103En(winter)	
	Sec. 1	III	F	217En(winter)	
	2	I	F	310En(spring)	
	2	II	Th	310En(spring)	

Junior and Senior Courses

51f	Exposition (3 cred.; jr., sr.; prereq. 3) (Limited to 35)	III	TThS	308En	Miss Thurston
	Sec. 1	II	TThS	307En	Mr. Lansing
	2	IV	MWF	307En	Mr. Lansing
51w	Exposition (Same as 51f)	II	TThS	307En	Mr. Lansing
	Sec. 1	III	MWF	307En	Mr. Lansing
	2	III	TThS	308En	Miss Thurston
51s	Exposition (Same as 51f)	II	TThS	308En	Miss Thurston
	Sec. 1	IV	MWF	308En	Miss Thurston
59s‡	Advanced Play Production (3 cred.; jr., sr.; prereq. 28 or permission of instructor)	II	TThS	312En	Mr. Drake
60w,s	Contemporary Literature (3 cred.; jr., sr.; prereq. 3)	IV	MWF	105En	Mr. Lansing

SOILS

Freshman and Sophomore Courses

9w	Soils I (4 cred.; soph., jr., sr.; prereq. Agr. Biochem. 4)	II	MTWTh	204So	Mr. Rost
10f,s	Soils II Laboratory (1 cred.; soph., jr., sr.; prereq. Soils 9) (Sections limited to 20 each)	VI, VII, VIII	M	201So	
	Sec. 1	VI, VII, VIII	T	201So	
	2	VI, VII, VIII	W	201So	
	3	VI, VII, VIII	Th	201So	
	4	VI, VII, VIII	F	201So	
	5	VI, VII, VIII	F	201So	

‡ A fee of \$1 per quarter is charged for this course.

Junior and Senior Courses

No.	Title	Hour	Day	Bldg.	Instructor
50Aw*	Forest Soils I (1 cred.; jr. and sr. in forestry; prereq. Agr. Biochem. 4)	IV	T	204So	Mr. McMiller
50Bs	Forest Soils II (1 cred.; jr. and sr. in forestry; prereq. Soils 50A)	Given at Cloquet			Mr. McMiller
101f	Chemical Analysis of Soils (3 to 5 cred.; jr., sr.; prereq. 9, quant. anal.)	IV	T	204So	Mr. Rost
	Lect.	IV	T	204So	Mr. Rost
	Lab.	Ar	Ar	Ar	
103s	Soil Erosion (3 cred.; jr., sr.; prereq. 9)	II	TThS	204So	Mr. Rost
104s	Soil Mapping (3 cred.; jr., sr.; prereq. 108)	Ar	Ar	204So	Mr. McMiller
107f	Fertilizers (3 cred.; jr., sr.; prereq. 9)	II	TThS	204So	Mr. Rost
108w	Physical Properties of Soils (3 cred.; jr., sr.; prereq. 9 or 50)	VI	W	204So	Mr. McMiller
	Lect.	VI	W	204So	Mr. McMiller
	Lab.	VII, VIII, IX	W	201So	Mr. McMiller
		VI, VII, VIII	F	201So	

VETERINARY MEDICINE

Junior and Senior Courses

50f-51w-52s†	Anatomy, Physiology, and Hygiene of Domestic Animals (9 cred.; jr., sr.)	I	TThS	102Ve	Mr. Boyd, Mr. Kernkamp
--------------	--	---	------	-------	---------------------------

* To receive credit the student must complete Course 50B.

† Course must be taken in sequence 50-51-52 but entire sequence need not be completed in order to receive credit.

SCHOOL OF BUSINESS ADMINISTRATION

ECONOMICS

Junior college advisers.—Associate Professor Borak; Instructors Dugan, Gaumnitz, Henwood, Lund, Peterson, Simpson, Tow, and Nina L. Youngs.

Major advisers in College of Science, Literature, and the Arts.—Professors Garver and Marget; Associate Professor Myers.

Major sequence in the College of Science, Literature, and the Arts.—A student majoring in Economics is required to earn at least 33 credits in Senior College courses as follows: (1) required courses: Economics 103-104, 141, 161; (2) at least 6 credits from Economics 105, 106, 108, 149, 176, 191-192; (3) at least 6 credits from Economics 110, 172, 175, 185; and (4) 9 additional credits from any Senior College economics courses listed in this bulletin. Students who expect to take postgraduate work in business or economics in this or another university are advised to include in their program the following courses: Economics 5 and 121-122-123 in statistics; and Economics 25-26 in accounting.

Modifications of this sequence will be permitted upon petition approved by the major adviser and the assistant dean for the Senior College.

(Prerequisites: Economics 3 and 6-7. In addition the student is urged to earn at least 9 credits in History, Political Science, or Sociology.)

Honors Course.—Students whose records show that they are capable of doing better than average work, and who wish to study for graduation honors or to pursue a special interest should consult a major adviser for modification of the sequential requirements.

Junior College Courses

No.	Title	Hour	Day	Bldg.	Instructor
1f	Industrial History (5 cred.; fr., soph.; no prereq.)				
	Lect.	III	TTh	BuAud	Mr. Heaton, and others
	Sec. 1	I	MWF	113VH	
	2	I	TThS	113VH	
	3	II	MWF	301VH	
	4	II	TThS	211VH	
	5	III	MWF	6VH	
	6	IV	MWF	205VH	
	7	IV	MWF	2VH	
	8	V	MWF	210VH	
	9	VI	MWF	205VH	
10	VI	MWF	113VH		
11	VII	MWF	113VH		
2w	Industrial Production and Organization (5 cred.; fr. only; no prereq.)				
	Lect.	III	TTh	BuAud	Mr. Filipetti and others
	Sec. 1	I	MWF	105VH	
	2	I	TThS	105VH	
	3	II	MWF	221VH	
	4	II	TThS	211VH	
	5	III	MWF	205VH	
	6	III	MWF	210VH	
	7	IV	MWF	205VH	
	8	V	MWF	205VH	
	9	VI	MWF	205VH	
10	VII	MWF	205VH		

SCHOOL OF BUSINESS ADMINISTRATION

No.	Title	Hour	Day	Bldg.	Instructor
3f	Elements of Money and Banking (5 cred.; 2nd and 3rd qtr. fr., soph.; no prereq.)				
	Lect.	II	TTh	JAud	Mr. Stehman
	Sec. 1	I	MWF	221VH	and others
	2	II	MWF	211VH	
	3	III	MWF	113VH	
	4	III	TThS	113VH	
	5	VII	MWF	2VH	
3w	Elements of Money and Banking (See 3f)				
		VII	MTWThF	2VH	Mr. Graves
3s	Elements of Money and Banking (See 3f)				
	Lect.	III	TTh	BuAud	Mr. Stehman
	Sec. 1	I	MWF	211VH	and others
	2	II	MWF	210VH	
	3	II	MWF	211VH	
	4	II	TThS	211VH	
	5	III	MWF	211VH	
	6	III	MWF	205VH	
	7	IV	MWF	211VH	
	8	V	MWF	211VH	
	9	VI	MWF	221VH	
	10	VII	MWF	205VH	
5f*	Elements of Statistics (5 cred.; soph.; no prereq.)				
	Lect.	III	M	JAud	Mr. Kozelka
	Sec. 1	I	TWThF	301VH	and others
	2	III	TWThF	301VH	
	3	V	MTWF	205VH	
	4	VI	TWThF	210VH	
5w*	Elements of Statistics (See 5f)				
	Lect.	III	M	JAud	Mr. Kozelka
	Sec. 1	I	TWThF	221VH	and others
	2	VI	TWThF	113VH	
5s*	Elements of Statistics (See 5f)				
	Lect.	II	F	BuAud	Mr. Kozelka
	Sec. 1	I	MTWTh	115VH	and others
	2	II	MTWTh	113VH	
	3	II	MTWTh	221VH	
	4	III	MTWTh	112VH	
	5	III	MTWTh	115VH	
	6	IV	MTWF	210VH	
	7	IV	MTWF	113VH	
	8	V	MTWF	115VH	
	9	VI	MTWTh	205VH	
	10	VII	MTWTh	211VH	
6f-7w†§	Principles of Economics (10 cred.; soph., jr., sr.; no prereq.)				
	Lect.	II	F	BuAud	Mr. Marget
	Sec. 1	I	MTWTh	115VH	and others
	2	II	MTWTh	113VH	
	3	II	MTWTh	112VH	
	4	III	MTWTh	115VH	
	5	III	MTWTh	112VH	
	6 (fall only)	IV	MTWF	115VH	
	7	IV	MTWF	221VH	
	8	V	MTWF	112VH	
	9	VI	MTWTh	115VH	
	10 (fall only)	VI	MTWTh	211VH	
	11	VII	MTWTh	112VH	

* Not open to students who have received credit in Soc. 45 or B.A. 70.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ The final examination in this course will conflict with that of any course having lectures the same hour MW. Therefore, students must not register for two such courses.

No.	Title	Hour	Day	Bldg.	Instructor
6w-7sf	Principles of Economics (See 6f-7w)				
	Lect.	IV	T	150Ph	Mr. Marget
	Sec. 1 (winter only)	I	MWThF	113VH	and others
	2	II	MWThF	115VH	
	3	III	MWThF	113VH	
	4 (winter only)	IV	MWFS	2VH	
	5	VI	MWThF	211VH	
6sf	Principles of Economics (1st qtr. of 6-7. See 6f-7w)	II	MTWThF	112VH	Ar
7ft	Principles of Economics (2nd qtr. of 6-7. See 6f-7w)	II	MTWThF	115VH	Ar
8f-9w	General Economics (6 cred.; soph., jr., sr., open to Institute of Technology students only; no prereq.)				
	Sec. 1	I	MWF	112VH	Mr. Filipetti
	2	II	MWF	210VH	and others
	3 (fall only)	III	MWF	211VH	
	4	IV	MWF	211VH	
8w-9s	General Economics (See 8f-9w)	III	TThS	211VH	Mr. Filipetti and others
10f	An Introduction to Economic Analysis (3 cred.; open to College of Pharmacy students only; no prereq.)	I	MWF	2VH	Mr. Simpson
20f§	Elements of Accounting (3 cred.; 3rd qtr. fr., soph.; no prereq.)				
	Sec. 1	I	MWF	210VH	Mr. Heilman
	2	I	TThS	307VH	and others
	3	II	MWF	307VH	
	4	II	TThS	301VH	
	5	III	MWF	307VH	
	6	III	MWF	210VH	
	7	III	TThS	221VH	
	8	IV	MWF	307VH	
	9	VI	MWF	112VH	
	10	VII	MWF	307VH	
20w§	Elements of Accounting (See 20f)				
	Sec. 1	II	MWF	307VH	Mr. Heilman
	2	III	MWF	307VH	and others
	3	IV	MWF	301VH	
	4	VI	MWF	210VH	
20s§	Elements of Accounting (See 20f)				
	Sec. 1	I	MWF	221VH	Mr. Heilman
	2	II	MWF	2VH	and others
	3	III	MWF	307VH	
	4	IV	MWF	115VH	
	5	VII	MWF	307VH	
25f-26w	Principles of Accounting (6 cred.; soph., jr., sr.; prereq. Econ. 20)				
	Sec. 1	III	TThS	205VH	Mr. Heilman
	2	VII	MWF	211VH	and others
25w-26s	Principles of Accounting (See 25f-26w)				
	Sec. 1	II	MWF	301VH	Mr. Heilman
	2 (winter only)	II	TThS	307VH	and others
	3	III	MWF	301VH	
	4	IV	MWF	307VH	
	5	VI	MWF	307VH	
25s	Principles of Accounting (1st qtr. of 25-26. See 25f-26w)				
	Sec. 1	I	MWF	210VH	Mr. Heilman
	2	II	TThS	210VH	and others

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ Students who have had high school training or other experience in bookkeeping and who pass a placement test may be exempt from this course and admitted to Econ. 25. This placement test will be given on the first day of each quarter. For further information consult the office of the dean of the School of Business Administration.

SCHOOL OF BUSINESS ADMINISTRATION

No.	Title	Hour	Day	Bldg.	Instructor
26f	Principles of Accounting (2nd qtr. of 25-26. See 25f-26w)				
	Sec. 1	I	MWF	307VH	Mr. Heilman
	2	VI	MWF	307VH	and others
27s‡	Accounting Survey (5 cred.; open to prelaw and law students only; no prereq.)				
		II	MTWThF	307VH	Mr. Miller
28f	Business Law (3 cred.; soph., jr., sr. with 6 cred. in econ. or sr. without econ. cred., open to Institute of Technology and College of Agriculture students only)				
		I	MWF	135E	Mr. Palmer
28s	Business Law (See 28f)				
		I	MWF	335EE	Mr. Palmer
29s	Principles of Accounting (3 cred.; soph., jr., sr., open to Institute of Technology students only; no prereq.)				
		I	MWF	307VH	Mr. Lund
30w	Elements of Retail Accounting (3 cred.; open to College of Pharmacy students only; prereq. Econ. 10)				
		II	MWF	211VH	Mr. Ostlund
32f-33w*†‡	Secretarial Training: Typewriting (2 cred.; fr., soph., jr., sr.; no prereq.)				
	Sec. 1	I	MTWThF	Ar	Ar
	2	II	MTWThF	Ar	Ar
	3 (fall only)	III	MTWThF	Ar	Miss Kean
	4	{ IV V	{ MTWF Th	Ar	Ar
	5					VI	MTWThF	Ar
	6 (winter only)	VII	MTWThF	Ar	Ar(f) Miss Dixon(w)
32w-33s*†‡	Secretarial Training: Typewriting (See 32f-33w)				
	Sec. 1	III	MTWThF	Ar	Miss Kean(w) Ar(s)
	2 (spring only)	VI	MTWThF	Ar	Ar
32s*†‡	Secretarial Training: Typewriting (1st qtr. of 32-33. See 32f-33w)				
	Sec. 1	II	MTWThF	Ar	Ar
	2	VII	MTWThF	Ar	Ar
33f*†‡	Secretarial Training: Typewriting (2nd qtr. of 32-33. See 32f-33w)				
	Sec. 1	{ IV V	{ MTWF Th	209VH	Miss Dixon
	2					VII	MTWThF	Ar
34f-w*†‡	Secretarial Training: Advanced Typewriting (1 cred.; soph., jr., sr.; prereq. consent of instructor)				
		III	MTWThF	209VH	Miss Dixon
34s*†‡	Secretarial Training: Advanced Typewriting (See 34f-w)				
		{ IV V	{ MTWF Th	209VH	Miss Dixon
37f-38w†‡**	Secretarial Training: Shorthand (6 cred.; soph., jr., sr.; prereq. Econ. 33 or consent of instructor)				
	Sec. 1	I	MTWThF	209VH	Miss Donaldson
	2	II	MTWThF	209VH	and others
	3 (fall only)	VII	MTWThF	209VH	Miss Kean
37w-38s†‡***	Secretarial Training: Shorthand (See 37f-38w)				
		VII	MTWThF	209VH	Miss Kean(w) Miss Dixon(s)
39s†***	Secretarial Training: Shorthand (3 cred.; soph., jr., sr.; prereq. Econ. 38 or consent of instructor)				
	Sec. 1	II	MTWThF	209VH	Miss Dixon
	2	III	MTWThF	209VH	Miss Kean
40f-41w†‡**	Secretarial Procedure (6 cred.; soph., jr., sr.; prereq. Econ. 34 and 39 or consent of instructor)				
		VI	MTWThF	209VH	Miss Kean

* Students who have had one year of high school typewriting are admitted to Econ. 33; those who have two years of high school typewriting may be admitted to Econ. 34 by passing a placement test.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$2.50 a quarter is charged students registering for one or more of these courses.

§ Not open to students who have received credit in Econ. 20, 25-26.

** Students who have had one year of high school shorthand are admitted to Econ. 38; those who have had two years of high school shorthand are admitted to Econ. 40.

No.	Title	Hour	Day	Bldg.	Instructor
42s‡	Advanced Secretarial Procedure (3 cred.; jr., sr.; prereq. Econ. 41)	I	MTWThF	209VH	Miss Kean
43s‡	Secretarial and Business Education Procedure—Filing methods and shorthand theory (3 cred.; soph., jr., sr.; prereq. Econ. 34 and 39 or consent of instructor; not open to students who have received credit in B.A. 181E.)	VI	MTWThF	209VH	Miss Donaldson

Senior College Courses

50f	Insurance Principles (3 cred.; jr., sr.; prereq. Econ. 6-7 or 83)	II	MWF	205VH	Mr. Graves
82f§||	Competition and Monopoly in Modern Industry (3 cred.; jr., sr.; no prereq.)	II	TThS	205VH	Mr. Stigler
83w§||	The Inequality of Incomes (3 cred.; jr., sr.; prereq. Econ. 82)	II	TThS	205VH	Mr. Stigler
84s	Comparative Economic Systems (3 cred.; jr., sr.; prereq. Econ. 6-7 or 83)	I	TThS	205VH	Mr. Uppgren
97f,98w,99s	Honors Course in Economics (Cred. ar.; jr., sr.; prereq. consent of major advisers)	Ar	Ar	Ar	Ar
103f-104w†	Advanced Economics (6 cred.; jr., sr., grad., not open to School of Business Administration students; prereq. 20 cred. in soc. sci. including Econ. 6-7 or 83)	II	TThS	210VH	Mr. Garver
105	<i>History of Economic Ideas: The Classical Economists</i> (3 cred.; jr., sr., grad.; prereq. B. A. 101-102 or Econ. 103-104 or consent of instructor) (<i>Not offered</i>)				
106f	<i>History of Economic Ideas: The Critics of the Classical Economists</i> (3 cred.; jr., sr., grad.; prereq. B. A. 101-102 or Econ. 103-104 or consent of instructor)	VI	MWF	221VH	Mr. Stigler
108s	Applications of Economic Theory (3 cred.; jr., sr., grad.; prereq. B. A. 101-102 or Econ. 103-104)	VII	MWF	207VH	Mr. Stigler
110s	Industrial Price Control (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83 and 15 additional credits in economics and/or business administration. B.A. 155 is a desirable preceding course)	III	TThS	221VH	Mr. Garver
115w	Probability and Statistics (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83)	IV	MWF	112VH	Mr. Altschul
117w	Contemporary European Economic Problems (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83)	VII	MWF	207VH	Mr. Altschul
121f-122w†- 123s	Theory of Statistics (9 cred.; jr., sr., grad.; prereq. Econ. 5)	I	MWF	205VH	Mr. Mudgett
124	<i>Comparative Banking: British Systems</i> (3 cred.; jr., sr., grad.; prereq. Econ. 141 or B. A. 142) (<i>Not offered</i>)				
126s	Economic Problems of Latin-America (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83)	II	MWF	205VH	Mr. Myers
127	<i>Comparative Banking: South American Systems</i> (3 cred.; jr., sr., grad.; prereq. Econ. 141 or B. A. 142) (<i>Not offered</i>)				
128s	Business Cycle Theory in European Literature (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83)	IV	MWF	112VH	Mr. Altschul
131f	Introduction to Mathematical Analysis in Economics (3 cred.; sr., grad.; prereq. Econ. 6-7 or 83)	III	TThS	210VH	Mr. Altschul
140s	The Co-operative Movement (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83)	VI	MWF	1VH	Mr. Vaile

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$2.50 per quarter is charged students registering for one or more of these courses.

§ Not open to students who have received credit for Econ. 6-7.

|| This course may not be included as a part of the Senior College work required for a minor in economics in the College of Science, Literature, and the Arts.

SCHOOL OF BUSINESS ADMINISTRATION

No.	Title	Hour	Day	Bldg.	Instructor
141f	Monetary and Banking Policy (3 cred.; jr., sr., grad.; not open to School of Business Administration students; prereq. Econ. 3 and either Econ. 6-7 or 83)	I	TThS	210VH	Mr. Myers
144f	Cartels and Trusts (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83)	VII	MWF	205VH	Mr. Altschul
149f	Business Cycles (3 cred.; sr., grad.; prereq. Econ. 141 or B. A. 142 or consent of instructor)	III	TThS	1 VH	Mr. Marget
149w	Business Cycles (See 149f)	VI	MWF	1 VH	Mr. Marget
149s	Business Cycles (See 149f)	II	TThS	1 VH	Mr. Marget
161f	Labor Problems and Trade Unionism (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83)	I	MWF	4VH	Ar
	Sec. 1	III	MWF	4VH	Mr. Yoder
	2	IV	MWF	4VH	Mr. Yoder
161w	Labor Problems and Trade Unionism (See 161f)	I	TThS	207VH	Ar
	Sec. 1	I	TThS	207VH	Ar
	2	II	MWF	1 VH	Mr. Yoder
161s	Labor Problems and Trade Unionism (See 161f)	I	TThS	207VH	Ar
	Sec. 1	I	TThS	207VH	Ar
	2	IV	MWF	1 VH	Mr. Schmidt
162w	Labor and Socialist Movements (3 cred.; jr., sr., grad.; prereq. Econ. 161)	VI	MWF	2VH	Mr. Schmidt
164s	Labor Legislation and Social Insurance (3 cred.; jr., sr., grad.; prereq. Econ. 161)	III	TThS	210VH	Mr. Schmidt
172f	Economics of Transportation (3 cred.; jr., sr., grad.; prereq. 20 cred. in soc. sci. including Econ. 6-7 or 83)	II	TThS	221VH	Ar
175f	Government Regulation of Business (3 cred.; jr., sr., grad.; prereq. 20 cred. in soc. sci. including Econ. 6-7 or 83)	III	MWF	207VH	Mr. Garver
175w	Government Regulation of Business (See 175f)	III	MWF	207VH	Ar
175s	Government Regulation of Business (See 175f)	II	TThS	207VH	Mr. Garver
176f	International Commercial Policies (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83)	I	MWF	207VH	Mr. Blakey
176s	International Commercial Policies (See 176f)	I	MWF	207VH	Mr. Blakey
178f	Economics of Consumption (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83)	I	MWF	209VH	Mr. Vaile
185w	Economics of Marketing (3 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83)	I	MWF	6VH	Mr. Vaile
191f-192w†§	Public Finance (6 cred.; jr., sr., grad.; prereq. Econ. 6-7 or 83)	III	MWF	221VH	Mr. Blakey
193s	State and Local Taxation (3 cred.; jr., sr., grad.; prereq. Econ. 191-192 or B. A. 58)	III	MWF	221VH	Mr. Blakey

Courses Open to Graduate Students Only

203f-204w	Seminar in Economic Theory (6 cred.; grad.)	VIII½-IX	MW	307VH	Mr. Garver
206	Seminar in Market Prices (3 cred.; grad.) (Not offered)				
207s	Theory of Demand (3 cred.; grad.)	VIII½-IX	TTh	307VH	Mr. Stigler
208	Production and Distribution (3 cred.; grad.) (Not offered)				
233-234	Seminar in Public Finance (6 cred.; grad.) (Not offered)				
243f-244w	Seminar in Money and Banking (6 cred.; grad.)	VIII½-IX	TF	307VH	Mr. Marget

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ Credit may not be received for both Economics 191-192 and B. A. 58.

No.	Title	Hour	Day	Bldg.	Instructor
251s	Seminar in Industrial Relations (3 cred.; grad.)	VIII½-IX	MW	307VH	Mr. Yoder
	Discussion of Papers in European Periodicals	Ar	Ar	Ar	Mr. Altschul

BUSINESS ADMINISTRATION

For advisers see the Bulletin of the School of Business Administration.

Courses Open to Business Administration Students Only

51f*	Business Law: Contracts (3 cred.; jr., sr.; prereq. Econ. 6-7)				
	Lect.	IV	T	BuAud	Mr. Gray
	Sec. 1	I	ThS	4VH	Mr. Gray
	2	I	ThS	2VH	Mr. Wattson
	3	II	ThS	4VH	Mr. Gray
	4	II	ThS	2VH	Mr. Wattson
	5	III	ThS	207VH	Mr. Wattson
52w*	-Business Law: Agency, Partnership, and Corporations (3 cred.; jr., sr.; prereq. B. A. 51)				
	Lect.	IV	T	BuAud	Mr. Gray
	Sec. 1	I	ThS	4VH	Mr. Gray
	2	I	ThS	2VH	Mr. Wattson
	3	II	ThS	4VH	Mr. Gray
	4	II	ThS	2VH	Mr. Wattson
	5	III	ThS	4VH	Mr. Wattson
53s*	Business Law: Sales and Negotiable Instruments (3 cred.; jr., sr.; prereq. B. A. 51)				
	Lect.	IV	T	BuAud	Mr. Gray
	Sec. 1	I	ThS	4VH	Mr. Gray
	2	I	ThS	2VH	Mr. Wattson
	3	II	ThS	6VH	Mr. Gray
	4	II	ThS	2VH	Mr. Wattson
	5	III	ThS	4VH	Mr. Wattson
54f-55w||	Elementary Accounting—Combined course (8 cred.; jr., sr.; no prereq.)				
	Sec. 1	V	MTWF	207VH	Mr. Miller
	2 (fall only)	VII	MTWF	207VH	Mr. Miller
56	<i>Property Rights and Obligations</i> (3 cred.; jr., sr.; prereq. B. A. 53) (Not offered)				
57f¶	Money and Banking (3 cred.; jr., sr.; no prereq.)				
		III	MWF	205VH	Ar
58f§††	Elements of Public Finance (3 cred.; jr., sr.; prereq. Econ. 6-7)				
		IV	MWF	207VH	Mr. Borak
58w§††	Elements of Public Finance (See 58f)				
		IV	MWF	207VH	Mr. Borak
58s§††	Elements of Public Finance (See 58f)				
	Sec. 1	IV	MWF	207VH	Mr. Borak
	2	VI	MWF	207VH	Mr. Borak
59f	Life Insurance (3 cred.; jr., sr.; prereq. Econ. 50 or concurrent)				
		III	TThS	211VH	Mr. Graves
60w	Fire and Marine Insurance (3 cred.; jr., sr.; prereq. Econ. 50)				
		III	MWF	6VH	Mr. Graves
61s	Casualty Insurance (3 cred.; jr., sr.; prereq. Econ. 50)				
		III	MWF	6VH	Mr. Graves
64w	Graphic Arts I: Elementary Principles of Design—Identical with Drawing and Descriptive Geometry 64 (3 cred.; jr., sr.; prereq. permission of adviser in School of Business Administration or in School of Journalism)				
		IV	MWF	206E	Mr. Doseff

* No credit will be allowed for B. A. 51, 52, or 53 until all three are completed.

§ Credit may not be received for both Economics 191-192 and B. A. 58.

¶ Credit may not be received for both Economics 3 and B. A. 57.

|| A combination of Economics 20, 25, and 26.

†† Economics 191-192 (6 cred.) may be substituted for B. A. 58 as a core group requirement.

SCHOOL OF BUSINESS ADMINISTRATION

No.	Title	Hour	Day	Bldg.	Instructor
65f‡	Graphic Arts II: Processes—Identical with Drawing and Descriptive Geometry 65 and Journalism 65 (3 cred.; jr., sr.; prereq. permission of adviser in School of Business Administration or in School of Journalism)				
		IV	MWF	105MurH	Mr. Barnhart
67s	Retail Store Management for Pharmacy Students (3 cred.; open to College of Pharmacy students only; prereq. Econ. 10 and 30)				
		I	MWF	6VH	Mr. Chute
68f	Sales Management (3 cred.; jr., sr.; prereq. B. A. 77)				
		II	TThS	1 VH	Mr. Chute
69w	Retail Store Management (3 cred.; jr., sr.; prereq. B. A. 77)				
		II	TThS	1 VH	Mr. Chute
70f**	Statistics Survey (3 cred.; jr., sr.; prereq. Econ. 6-7)				
	Sec. 1	I	MWF	6VH	Mr. Gaumnitz
	2	IV	MWF	112VH	Mr. Graves
71f	Transportation: Services and Charges I (3 cred.; jr., sr.; prereq. Econ. 6-7)				
		I	MWF	1 VH	Mr. Nightingale
71w	Transportation: Services and Charges I (See 71f)				
		III	TThS	2VH	Mr. Nightingale
71s	Transportation: Services and Charges I (See 71f)				
		III	MWF	1 VH	Mr. Nightingale
72s	Transportation: Services and Charges II (3 cred.; jr., sr.; prereq. B. A. 71)				
		I	MWF	112VH	Mr. Nightingale
76w	Credits and Collections (3 cred.; jr., sr.; prereq. B. A. 77)				
		III	TThS	6VH	Mr. Chute
77f	Survey in Marketing (3 cred.; jr., sr.; prereq. Econ. 6-7)				
	Lect.	I	TTh	1 VH	Mr. Vaile
	Sec. 1	I	S	1 VH	Miss Canoyer
	2	I	S	6 VH	Mr. Chute
	3	VII	T	1 VH	Miss Canoyer
77w	Survey in Marketing (See 77f)				
	Lect.	IV	MW	1 VH	Mr. Chute, Miss Canoyer
	Sec. 1	IV	F	1 VH	Mr. Chute
	2	VI	T	2 VH	Miss Canoyer
	3	VII	T	1 VH	Miss Canoyer
77s	Survey in Marketing (See 77f)				
	Lect.	I	TTh	1 VH	Mr. Vaile
	Sec. 1	I	S	1 VH	Mr. Chute
	2	I	S	112VH	Miss Canoyer
	3	VII	T	1 VH	Miss Canoyer
86s	Office Management (3 cred.; jr., sr.; prereq. Econ. 6-7)				
		III	MWF	210VH	Miss Donaldson
88w	Advertising (3 cred.; jr., sr.; prereq. B. A. 77 and Psy. 56)				
		II	MWF	4VH	Mr. Vaile
88s	Advertising (See 88w)				
		II	TThS	4VH	Mr. Vaile
89f	Production Management (3 cred.; jr., sr.; prereq. B. A. 77)				
	Sec. 1	II	MWF	4VH	Mr. Filipetti
	2	III	TThS	4VH	Mr. Thompson
89w	Production Management (See 89f)				
	Sec. 1	II	MWF	6VH	Mr. Filipetti
	2	III	MWF	4VH	Mr. Thompson
89s	Production Management (See 89f)				
	Sec. 1	I	MWF	4VH	Mr. Filipetti
	2	II	MWF	4VH	Mr. Filipetti
91f	Tabulating Equipment Laboratory (1 cred.; jr., sr.; prereq. Econ. 26 and either 5 or B. A. 70)				
	Sec. 1	IV-V	T	2VH	Mr. Gaumnitz
	2	VIII-IX	F	2VH	Mr. Gaumnitz
91w	Tabulating Equipment Laboratory (See 91f)				
	Sec. 1	IV-V	T	6VH	Mr. Gaumnitz
	2	VIII-IX	M	6VH	Mr. Gaumnitz

‡ Journalism course. A fee of \$1 per quarter is charged students taking courses in Journalism.

** Not open to students who have received credit in Economics 5.

No.	Title	Hour	Day	Bldg.	Instructor
91s	Tabulating Equipment Laboratory (See 91f)				
	Sec. 1	IV-V	T	2VH	Mr. Gaumnitz
	2	VIII-IX	M	2VH	Mr. Gaumnitz
92w	Accounting Practice Laboratory (1 cred.; jr., sr., open to accounting majors only; prereq. Econ. 26)				
		V-VI	Th	301VH	Mr. Lund
92s	Accounting Practice Laboratory (See 92f)				
	Sec. 1	III-IV	S	307VH	Mr. Lund
	2	VI-VII	T	307VH	Mr. Lund
93f	Accounting Laboratory (1 cred.; jr., sr.; open to accounting and commercial education majors only; prereq. Econ. 26)				
	Sec. 1	VII-VIII	M	301VH	Mrs. Youngs
	2	VI-VII	Th	307VH	Mrs. Youngs
93w	Accounting Laboratory (See 93f)				
		VI-VII	Th	307VH	Mrs. Youngs
94w	Cost Accounting Laboratory (1 cred.; jr., sr.; prereq. B. A. 152 or concurrent)				
		VII-VIII	Th	301VH	Mr. Peterson
94s	Cost Accounting Laboratory (See 94f)				
		V-VI	Th	307VH	Mr. Peterson
95f	Auditing Laboratory (1 cred.; jr., sr.; prereq. B. A. 135 or concurrent)				
	Sec. 1	III-IV	T	307VH	Mr. Miller
	2	VI-VII	Th	301VH	Mr. Miller
95s	Auditing Laboratory (See 95f)				
		VII-VIII	Th	301VH	Mr. Miller
97f,98w,99s	Honors Course in Business Administration (Cred. ar.; jr., sr.; prereq. permission of the dean)				
		Ar	Ar	Ar	Ar
101f-102w†	Advanced General Economics (6 cred.; sr., grad.; prereq. Econ. 6-7)				
	Sec. 1	II	MWF	2VH	Mr. Stigler
	2	II	TThS	6VH	Mr. Boddy
	3	III	MWF	105VH	Mr. Mudgett
	4	IV	MWF	113VH	Mr. Boddy(f), Mr. Stigler(w)
	5	VII	MWF	105VH	Mr. Boddy
101w-102s†	Advanced General Economics (See 101f-102w)				
	Sec. 1	I	TThS	6VH	Mr. Boddy
	2	VII	MWF	6VH	Mr. Garver
109w	Business Policy (3 cred.; sr., grad.; prereq. B. A. 101-102)				
		II	MWF	105VH	Mr. Reighard
109s	Business Policy (See 109w)				
		II	MWF	105VH	Mr. Reighard
112f‡	Business Statistics (3 cred.; jr., sr., grad.; prereq. Econ. 5 or B. A. 70)				
	Sec. 1	I	TThS	207VH	Mr. Kozelka
	2	VI	MWF	6VH	Mr. Kozelka
112w‡	Business Statistics (See 112f)				
	Sec. 1	I	TThS	205VH	Mr. Kozelka
	2	II	MWF	205VH	Ar
	3	III	TThS	221VH	Mr. Kozelka
112s‡	Business Statistics (See 112f)				
	Sec. 1	II	TThS	205VH	Mr. Kozelka
	2	III	MWF	207VH	Mr. Kozelka
	3	VI	MWF	2VH	Mr. Kozelka
119	Correlation (3 cred.; jr., sr., grad.; prereq. Econ. 5 or B. A. 70) (Not offered)				
120	Index Numbers (3 cred.; jr., sr., grad.; prereq. Econ. 5 or B. A. 70) (Not offered)				
130f	Cost Accounting Survey (3 cred.; jr., sr., grad.; prereq. Econ. 25-26)				
		I	MWF	105VH	Mr. Ostlund
130s	Cost Accounting Survey (See 130f)				
		I	TThS	105VH	Mr. Ostlund
133s	Standard Costs (3 cred.; jr., sr., grad.; prereq. B. A. 130 or 153)				
		II	TThS	301VH	Mr. Ostlund

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per quarter is charged for this course.

SCHOOL OF BUSINESS ADMINISTRATION

No.	Title	Hour	Day	Bldg.	Instructor
134f	Income Tax Accounting (3 cred.; jr., sr., grad.; prereq. B. A. 139 or 151)	I	MWF	4VH	Mr. Reighard
134w	Income Tax Accounting (See 134f)	III	TThS	210VH	Mr. Reighard
135f	Auditing and Public Accounting (3 cred.; jr., sr., grad.; prereq. B. A. 139 or 151)	III	MWF	2VH	Mr. Reighard
135s	Auditing and Public Accounting (See 135f)	III	TThS	207VH	Mr. Reighard
136s	Internal Auditing and Accounting Control (3 cred.; jr., sr., grad.; prereq. B. A. 139 or 151)	III	MWF	4VH	Mr. Reighard
139f‡	Advanced General Accounting (3 cred.; jr., sr., grad.; prereq. Econ. 25-26)	IV	MWF	1VH	Mr. Heilman
139w‡	Advanced General Accounting (See 139f)	III	TThS	1VH	Mr. Heilman
139s‡	Advanced General Accounting (See 139f)	III	TThS	1VH	Mr. Heilman
142f	Advanced Money and Banking (3 cred.; jr., sr., grad.; prereq. Econ. 3 and 6-7)	II	MWF	6VH	Mr. Myers
	2	VI	MWF	2VH	Mr. Marget
142w	Advanced Money and Banking (See 142f)	II	TThS	105VH	Mr. Myers
	2	IV	MWF	6VH	Mr. Myers
142s	Advanced Money and Banking (See 142f)	I	MWF	105VH	Mr. Myers
	2	VI	MWF	6VH	Mr. Marget
145	<i>Foreign Exchange</i> (3 cred.; jr., sr., grad.; prereq. B. A. 142) (<i>Not offered</i>)				
146f	Investments (3 cred.; jr., sr., grad.; prereq. B. A. 155)	VI	MWF	105VH	Mr. Upgren
147f	Bank Administration (3 cred.; jr., sr., grad.; prereq. B. A. 142)	IV	MWF	6VH	Mr. Myers
148w	The Securities Market (3 cred.; sr., grad.; prereq. B. A. 146 and Econ. 149)	II	TThS	221VH	Mr. Upgren
150f-151w†‡	Accounting Practice and Procedure (6 cred.; jr., sr., grad.; prereq. Econ. 25-26)	II	MWF	207VH	Mr. Heilman
150w-151s†‡	Accounting Practice and Procedure (See 150f-151w)	III	MWF	2VH	Mr. Heilman
152f-153w†	Cost Accounting (6 cred.; jr., sr., grad.; prereq. Econ. 25-26)	II	TThS	207VH	Mr. Ostlund
152w-153s†	Cost Accounting (See 152f-153w)	IV	MWF	105VH	Mr. Ostlund
155f	Corporation Finance (3 cred.; jr., sr., grad.; prereq. Econ. 3 and 6-7)	III	MWF	1VH	Mr. Stehman
	2	III	TThS	105VH	Mr. Upgren
155w	Corporation Finance (See 155f)	III	TThS	105VH	Mr. Stehman
	2	III	MWF	1VH	Mr. Stehman
155s	Corporation Finance (See 155f)	II	MWF	207VH	Mr. Stehman
	2	IV	MWF	4VH	Mr. Upgren
156f	Finance Management (3 cred.; jr., sr., grad.; prereq. B. A. 155)	II	MWF	221VH	Mr. Stehman
158s	Governmental Accounting (3 cred.; sr., grad.; prereq. B. A. 139 or 151)	I	TThS	221VH	Mr. Heilman
159	<i>Public Utility and Railroad Accounting</i> (3 cred.; sr., grad.; prereq. B. A. 139 or 151) (<i>Not offered</i>)				
165w	Economics of Public Utilities (3 cred.; jr., sr., grad.; prereq. Econ. 3 and 6-7)	III	TThS	207VH	Mr. Schmidt
165s	Economics of Public Utilities (See 165w)	I	MWF	1VH	Mr. Schmidt

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per quarter is charged for this course.

No.	Title	Hour	Day	Bldg.	Instructor
167f	Personnel Administration (3 cred.; jr., sr., grad.; prereq. B. A. 89 and Econ. 161)	II	MWF	1 VH	Mr. Yoder
167w	Personnel Administration (See 167f)	IV	MWF	4 VH	Mr. Yoder
167s	Personnel Administration (See 167f)	II	MWF	1 VH	Mr. Yoder
170w‡	Motion Economy (3 cred.; jr., sr., grad.; prereq. B. A. 184)	VI	MWF	301VH	Ar
171s‡	Production Standards (3 cred.; jr., sr., grad.; prereq. B. A. 170)	VI	MWF	301VH	Ar
177w	Foreign Trade (3 cred.; jr., sr., grad.; prereq. Econ. 176)	I	MWF	207VH	Mr. Blakey
180f-181w-182s	Senior Topics Courses (School of Business Administration seniors)				
	A. Accounting (6 cred.; fall and winter)	VI½-VII(f)	TTh	113VH	Mr. Rotzel
		I(w)	MWF	307VH	Mr. Reighard
	B. Business Finance (6 cred.; winter and spring)	VII	MWF	221VH	Mr. Stehman
	C. Marketing (9 cred.)	VI½-VII	TTh	4VH	Mr. Vaile(f,w), Mr. Chute(s)
	D. Personnel Management (9 cred.)	VI½-VII	TTh	221VH	Mr. Yoder
	E. Secretarial Practice (6 cred.; fall and winter)	IV	MWF	210VH	Miss Donaldson
	F. Statistics (9 cred.)	VI½-VII	TTh	6VH	Mr. Mudgett(f,s), Mr. Kozelka(w)
	G. § Production Management (9 cred.)	VII	MWF	1 VH(f) 115VH(w,s)	Mr. Filipetti
	H. Insurance (3 cred.; spring)	IV	MWF	301VH	Mr. Graves
	I. Public Utilities and Transportation (6 cred.; fall and winter)	VI½-VII	TTh	205VH	Mr. Schmidt
	J. Office Management (3 cred.; spring)	II	MWF	208VH	Miss Donaldson
183f,w,s	Practice Course (Cred. ar.; jr., sr., grad.; prereq. consent of adviser)	Ar	Ar	Ar	Members of the staff
184f§	Scientific Management in Industry (3 cred.; sr., grad.; prereq. Econ. 6-7)	VI	MWF	301VH	Mr. Filipetti
194s	Advanced Advertising Procedure (3 cred.; jr., sr., grad.; prereq. Econ. 5 and B. A. 88)	IV	MWF	2VH	Mr. Longstaff

‡ A fee of \$1 is charged for this course.

§ Credit may not be received for both B. A. 181G and B. A. 184.

INDEX

	Page		Page
Abbreviations and symbols	7	Home Economics Education	128
Administrative offices	5	Horticulture	157
Agricultural Biochemistry	141	How To Study	60
Agricultural Economics	142	Human Anatomy	19
Agricultural Education	115	Human Physiology	81
Agricultural Engineering	143		
Agronomy and Plant Genetics	146	Industrial Education	130
Anatomy, Human	19	Italian	94, 97
Animal and Poultry Husbandry	147		
Animal Husbandry	147	Journalsim	60, 134
Anthropology	19, 64	Latin	34, 36
Architecture	21	Library Instruction	9
Art Education	38, 116	Library Methods	64
Astronomy	23	Linguistics and Comparative Philology	64, 65
Bacteriology	23	Mathematics	66
Biostatistics	90	Methods and Directed Teaching	131
Botany	25	Military Science and Tactics	11
Buildings	7	Music	69
Business Administration	169	Music Education	38, 134
Chemistry	28	Natural Science	73
Child Welfare	33	Naval Science and Tactics	12
Classics	34, 65, 66	Nursing Education	135
Comparative Philology and Linguistics	64, 65		
Composition	42	Orientation	158
Course numbering	7		
Curriculum and Instruction	119	Philosophy	74
		Physical Education	
Dairy Husbandry	148	for Men	14, 136
Departmental offices	6	for Women	15, 138
Drawing and Descriptive Geometry	37	Physics	77
		Physiology	81
Economics	163	Plant Pathology and Botany	158
Education	38, 114	Political Science	83
Educational Administration	124	Poultry Husbandry	147
Educational Psychology	38, 125	Preventive Medicine and Public Health	87
English	39, 65	Psychology	91
Entomology and Economic Zoology	113, 149	Publications and Rural Journalism	159
Explanations	7		
		Rhetoric	160
Fine Arts	45	Romance Languages	94
Forestry	150	Russian	99
French	65, 66, 94, 95		
		Scandinavian	65, 99
General Courses—Education	114	Sociology and Social Work	100
Geography	48	Soils	161
Geology and Mineralogy	49	Spanish	66, 94, 97
Geophysics	81	Speech	106
German	53, 65, 66		
Greek	35	University calendar	3
History	56	Veterinary Medicine	162
History and Philosophy of Education	127	Vocational Orientation	110
Home Economics	59, 152	Zoology	110

BULLETIN OF THE
UNIVERSITY OF MINNESOTA
Department of Agricultural Education

Summer Session Offerings
of Special Interest to
Teachers of Vocational Agriculture

1942

Six weeks — June 15 - July 25

Four weeks — June 15 - July 11

Vol. XLV

No. 24

April 22, 1942

Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 12, 1918.

AGRICULTURAL EDUCATION

Summer Session—1942

The 1942 Summer Session at the University of Minnesota makes special provision for professional upgrading of teachers of vocational agriculture. Two terms are provided for agriculture teachers, one beginning June 15 and closing July 25 and a special term beginning June 15 and closing July 11. A maximum of nine credits is considered a full program for the regular term and six credits for the special term. For convenience to teachers, arrangements have been made for holding the summer conference for teachers of vocational agriculture during the first week of the Summer Session. This makes possible a saving of time and expense for those who desire to do graduate work during the summer.

In view of the present world crisis and the importance of agriculture as a factor in the successful prosecution of the war, attendance at summer school takes on a new meaning. It is perhaps more important than ever for teachers of agriculture to be well informed on the latest and most valuable scientific facts as a guide to better farming. The very best methods of teaching are essential to maintain the interest of the students during these stirring times. A few weeks at summer school may be just the push needed to rise to the level of greatest teaching efficiency.

The special courses provided for teachers of vocational agriculture will include: (1) a non-credit seminar in which the latest developments in technical agriculture and in agricultural education will be reviewed, (2) technical courses in farm accounting and in agricultural machinery and mechanical power, and (3) special graduate courses in agricultural education.

In addition to the special offerings there are other graduate courses available in the College of Agriculture during the six-week term and several of the offerings in the College of Education may be of interest to majors in Agricultural Education. These are described in the Summer Session Bulletin which may be obtained from the Office of Admissions and Records, University of Minnesota, Minneapolis.

If additional information regarding Agricultural Education courses is desired please write to Professor A. M. Field, Department of Agricultural Education, University Farm, St. Paul, Minnesota.

Agricultural Education

Agr.Ed.141su. Supervised Practice in Vocational Agriculture. The selection, planning and supervision of farming programs for individuals and groups directed toward establishment in farming. Special emphasis on the determination of needs, financing of programs and the keeping of

accounts. (2 or 3 cred.; sr., grad.; prereq. 10 hrs. in ed.; MTWThF I; 301 Hort.UF). Mr. Ekstrom.

Agr.Ed.145su. The Integrated Course of Study in Agriculture. A presentation of present trends in the practices of organization, administration and teaching in departments of agriculture in the secondary schools. Emphasis on problems of guidance and counseling as a phase of the agriculture program, course of study construction and planning programs for individual students. (2 or 3 cred.; sr., grad.; prereq. 10 hrs. in ed.; MTWThF II; 301 Hort.UF). Mr. Field.

Agr.Ed.191su. Seminar in Agricultural Education. Presentation and discussion of recent developments in technical agriculture and agricultural education as these developments affect the work of the teacher. (No. cred.; ar.) Mr. Field.

Agr.Ed.232su.* Research in Agricultural Education. Introduction to investigational work in problems of teaching agriculture in the high schools. Experience in selecting programs, preparing bibliographies, analyzing and interpreting data and preparing manuscripts. (3-9 cred.; grad.; prereq. 15 hrs. in ed.; lect. hrs. and individual work ar.; 205 Hort.UF.) Mr. Field, Mr. Ekstrom.

* Course offers an opportunity to meet 9-hour requirement for Plan B candidates of the Master's degree.

Agr.Ed.237su. Adult Education in Agriculture. The organization, objectives and techniques for conducting evening schools and part-time schools for farmers and out-of-school youth. (2 or 3 cred.; grad.; pre-req. 15 hrs. in ed.; MTWThF III; 301 Hort. UF). Mr. Ekstrom.

Agr.Ed.286su. Special Problems in Agricultural Education. Analysis and discussion of special problems of individual teachers. Opportunity for intensive study of specific problems related to local school programs. (2 or 3 cred.; grad.; prereq. consent of instructor; ar.; 205 Hort.UF). Mr. Field, Mr. Ekstrom.

The following special courses designed to meet the urgent need for specialized preparation in Farm Machinery and Farm Management should be of interest to Teachers of Agriculture. These courses will be offered during the Summer Session at University Farm.

Agr.Econ.180su. Advanced Farm Accounting. A study of the use of farm records in analyzing and improving the farm organization, types of farm records and their use, calculation of measures of earnings and of organization and efficiency factors, and their application to farm business analysis. (3 cred.; jr., sr., grad.; prereq. 2 or consent of instructor; MTWThF II and 3 hrs. ar. for 4 weeks; 312 HH.) Mr. Engene.

Agr.Eng.124su. Agricultural Machinery and Mechanical Power Management. Machine and power management and use. Special problems for teachers. (2-3 cred.; prereq. 9 cred. in Agr. Eng. or equiv. including, physics, 9 cred. in ed. or equiv.; lect. MTWF III, lab. ar.; 105 En.) Mr. Schwantes, Mr. Field, and other staff members.

In addition to the courses listed above, there are available several other offerings that should be of interest to teachers of agriculture. Among these, the following are suggested: Agr.Econ. 170su. Land Economics. Mr. Dowell, and Agr. Eng. 42su. Art Metal Work. Mr. Dent. There are also a number of special problems courses available in the various subject-matter divisions at the College of Agriculture.

Admission

Teachers who plan to register in the Graduate School for the first time should file an application for admission at the Graduate School office. An official transcript of previous college work should accompany the application for admission to the Graduate School. It would save time and confusion at the time of registration if this could be done through correspondence before reporting for registration. Correspondence regarding admission should be addressed to the Dean of the Graduate School, University of Minnesota, Minneapolis.

Fees

The total fee for the six-week term is \$30.00 which includes tuition and incidental fees. Fees for the four-week term amount to \$20.00 for four credits and \$25.00 for six credits. The incidental fee provides for each student the privileges of the Coffman Memorial Union, the Health Service, the Minnesota Daily and the University Post Office service.

Bulletin of
University of Minnesota

Summer Session, 1942

SPECIAL COURSES
for
PRESENT AND
PROSPECTIVE WORKERS

in
DISTRIBUTIVE
OCCUPATIONS
EDUCATION



First Term—June 15 to July 24

Vol. XLV

No. 25

April 25, 1942

Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota. Accepted for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized July 12, 1918.

Workers in Distributive Occupations Education

The University of Minnesota announces an outstanding offering of courses for present and prospective workers in the field of distributive occupations education during the first term of the 1942 Summer Session, from June 15 to July 24. In all of these courses, emphasis will be given to revised materials in the distributive field to meet retailing problems under war conditions.

The course offerings for this series have been planned co-operatively by the School of Business Administration, the College of Education, and the Vocational Education Division of the Minnesota State Department of Education, with the advice of the regional agent for distributive education of the United States Office of Education.

The courses are designed primarily for the teachers, co-ordinators and supervisors of distributive occupations classes and programs established in the public schools of any state under the provisions of the George-Deen Act for the further extension of vocational education. They should also prove to be of interest and value to the following groups:

- a. Persons with experience in distributive occupations who wish to qualify as teachers in public vocational classes.
- b. High school teachers of other subjects, particularly teachers of business subjects, who have had some experience in distributive occupations and who wish to qualify as teachers of reimbursable distributive classes or to develop preparatory (non-reimbursable) programs in distributive education.
- c. School administrators and supervisors.
- d. Business executives responsible for the in-service training of employees in distributive enterprises.
- e. Advanced or graduate students in business who desire training to gain a better understanding of the educational functions of the minor and intermediate executive positions in business.

The offering includes (1) *professional courses in distributive education*, dealing with problems of instruction and administration, selection and training of teachers for distributive education, and problems of co-operative part-time distributive classes; and (2) *technical related courses in business*, dealing with problems of consumer economics, marketing, and merchandising. In addition to the courses suggested and described in this leaflet, the Summer Session will offer many others in related aspects of education, economics, and business administration. Those interested in the ad-

Psy.130su. Vocational Psychology. (Lect. MF IV, Th V, 115Psy; Lab. TW, IV, V; 211Psy.) Mr. Longstaff.

Psy.160su. Psychology in Personnel Work. (MTWThF II; 109Psy.) Mr. Longstaff.

STAFF

Instructional

Helen Canoyer, Ph.D., Assistant Professor of Economics and Marketing, University of Minnesota

A. Hamilton Chute, Ph.D., Associate Professor of Economics and Marketing, University of Minnesota

John Dillon, M.S., Teacher Trainer, Distributive Education, University of Indiana, Lecturer

George Filipetti, Ph.D., Professor of Economics and Business Administration, University of Minnesota

Alton D. Hill, M.A., Instructor in Industrial Education, University of Minnesota

Bradley C. Lawton, B.A., Supervisor of Distributive Occupations, Minnesota State Department of Education, Lecturer

Howard Longstaff, Ph.D., Associate Professor of Psychology, University of Minnesota

Arthur W. Marget, Ph.D., Professor of Economics and Finance, University of Minnesota

Rae C. Williams, M.A., Retailing Co-ordinator, Technical High School, Omaha, Nebraska, Lecturer

Dale Yoder, Ph.D., Professor of Economics and Industrial Relations, University of Minnesota

Advisory

Wesley E. Peik, Ph.D., Dean of the College of Education, University of Minnesota

Russell A. Stevenson, Ph.D., LL.D., Dean of the School of Business Administration, University of Minnesota

G. Henry Richert, M.B.A., Regional Agent, Distributive Education Service, Vocational Education Division, United States Office of Education, Federal Security Administration, Consultant

Harry C. Schmid, M.A., Acting Director of Vocational Education, Minnesota State Department of Education

Homer J. Smith, Ph.D., Chairman of Industrial Education Department, University of Minnesota

OUTLOOK FOR DISTRIBUTIVE EDUCATION

Interest in distributive education is increasing throughout the country and in Minnesota. In normal times, almost nine million people, or one out of eight of all gainfully employed workers, are engaged in distributive occupations. The great majority of such workers have had little or no technical training for improvement of their service to their employers and to the public, and for their own advancement through increased knowledge and skill. In wartime, emergency problems such as replacement of workers going into the armed forces and defense industries, replacement of men by women and untrained youth, and the use of substitute merchandise make distributive educa-

- Ed.C.I.134su.‡‡ Selection and Training of Teachers for Part-time and Evening Distributive Education Classes. Recommended to anyone responsible for teaching groups or individuals in the distributive field, full time or part time, including distributive education supervisors, co-ordinators, and teachers; store executives; and all teachers of vocational subjects. Will include a practical demonstration of a new wartime course for store executives on "How To Instruct Employees," presented for the first time in any college or university class. Techniques to be demonstrated are applicable to any teaching situation in distributive education. (3 cred.; jr., sr., grad.; MTWF IV and 1 hr. ar.; 112 VH.) Mr. Dillon, Mr. Lawton, Mr. Richert.
- Ed.C.I.136su.‡‡ Organization and Supervision of Part-time and Evening Distributive Education Programs. Promotional problems; securing the interest of proprietors, managers, and employees; pre-employment training; wartime training. Recommended as an introductory course explaining the principles and practices followed in developing all types of distributive education programs under the George-Deen Act. (3 cred.; jr., sr., grad.; MTWThF I; 112 VH.) Mrs. Williams.
- Ed.C.I.137su.‡‡ Instructional Materials Used in Teaching Distributive Education Classes. Emphasis on the adaptation of distributive education instructional materials to meet wartime needs; sources of instructional materials; outlines and texts developed by trade associations, particularly in the drug, meat, restaurant, and grocery fields; merchandise information; consumer guides; evaluation of instructional materials; devices for drawing upon experience of the class; use of demonstration, case studies, lecture, conference, and discussion techniques. Recommended especially for persons now employed in the distributive education program. (3 cred.; jr., sr., grad.; MTWThF III; 112 VH.) Mr. Dillon, Mr. Lawton, Mr. Richert.
- Ed.C.I.138su.‡‡ Problems of Distributive Education. Advanced course in methods of teaching business, with emphasis on meeting wartime conditions. Experts in business training from various Minneapolis and St. Paul stores. Mr. Schmid and Mr. Lawton will be present at several meetings of the class to assist in discussions. (2 cred.; jr., sr., grad.; MTWThF VI; 112 VH.) Mr. Dillon, Mr. Lawton, Mr. Richert, Mrs. Williams.

RELATED COURSES

First Term, June 15 to July 24

- B.A.89su. Production Management. (MTWThF II; 2 VH.) Mr. Filipetti.
- Econ.149su. Business Cycles. (MTWThF V; 1 VH.) Mr. Marget.
- Econ.178su. Consumer Economics. (MTWThF III; 1 VH.) Miss Canoyer.
- Econ.185su. Economics of Marketing. (MTWF IV and 1 hr. ar.; 2 VH.) Mr. Chute.
- Ind.107su. Co-ordination. (MTWThF III; 209EdH.) Mr. Hill.

Second Term, July 27 to August 28

- Econ.161su. Labor Problems and Trade Unionism. (MTWThF I; 2 VH.) Mr. Yoder.
- B.A.167su. Personnel Administration. (MTWThF III; 2 VH.) Mr. Yoder.

‡‡ A special fee of \$1 per credit will be charged for this course.

ditional offerings for either the first or the second term should request a copy of the Summer Session Bulletin. Such requests may be addressed to the office of admissions and records, University of Minnesota, Minneapolis, Minnesota.

The University of Minnesota is exceptionally well situated to provide training facilities in the field of distributive occupations. The Twin City metropolitan area serves as the business center for the west north central region. The School of Business Administration has maintained co-operative relations with many of the outstanding mercantile firms for many years.

CREDITS, FEES, AND REGISTRATION

The courses numbered above 99 may be taken for *graduate credit* by those who meet the requirements of the Graduate School and for *undergraduate credit* by candidates for a Bachelor's degree. Others may register for credit or as auditors, the same fees being applicable for both. Students may register for one or more courses, with nine credits as the maximum for the six-week session. Fees for the term are \$32 for five or more credits, and \$22 for four or less credits.‡ A special fee of \$1 per credit is charged in addition for the education courses. Students may register on either June 15 or 16 in the ballroom of Coffman Memorial Union on the Main campus.

Students planning to register for graduate credit must apply for admission to the Graduate School at least two weeks before the opening of the Summer Session. The application must be accompanied by an official transcript in duplicate of undergraduate work, except for graduates of the University of Minnesota.

Those who do not desire graduate credit may register as adult special students in the College of Education.

COURSES IN DISTRIBUTIVE OCCUPATIONS EDUCATION

Ed.C.I.132su.‡‡ Promotion and Supervision of Co-operative Part-time Classes in Distributive Education. Special emphasis on wartime problems. Particularly recommended for business education teachers as an introduction to this area in the distributive education field. (3 cred.; jr., sr., grad.; MTWThF II; 112 VH.) Mrs. Williams.

‡ A deposit of \$2, refundable at the end of the term if no library or other charges are outstanding, is included in the fees stated.

‡‡ A special fee of \$1 per credit will be charged for this course.

tion even more important to our national morale and efficiency than in normal times.

Both class enrolments and numbers of teachers engaged in teaching distributive education classes are increasing rapidly. Opportunity for service through distributive education can hardly be surpassed in any other field of education, and the outlook for distributive education in the years immediately ahead is exceptionally favorable.

GENERAL INFORMATION

The University of Minnesota, located midway between the Twin Cities of Minneapolis and St. Paul, yet easily accessible to the vast outdoor playground of northern Minnesota, provides an ideal place to enjoy a profitable summer of study and healthful relaxation.

On its Main campus, situated on the north bank of the Mississippi River in Minneapolis, the University places at the disposal of the Summer Session student the facilities of a great educational institution—its libraries, laboratories, observatory, and museums—and in addition the recreational resources of its several swimming pools, golf course, and tennis courts, and the new Coffman Memorial Union. The added cultural advantages of two large metropolitan centers offer attractions for the Summer Session student that are unique with the University of Minnesota.

The campus is far enough away from the centers of the cities for the provision of pleasant surroundings for students, and close enough to the business areas for easy access in making contacts with business establishments.

REQUESTS FOR INFORMATION

Requests for information should be addressed to the University of Minnesota, Minneapolis, Minnesota, as follows:

Requests for Summer Session Bulletin—Office of Admissions and Records

Information concerning housing—

Dormitory for men—Pioneer Hall Director

Dormitory for women—Comstock Hall Director or Sanford Hall Director

Other rooms—Housing Bureau, Administration Building

General information—Dean's office, College of Education

Requests for admission to Graduate School—Dean's office, Graduate School

Bulletin of
UNIVERSITY OF MINNESOTA
Agricultural Short Courses

Second Annual
Rose Growers' Day

Division of Horticulture
University of Minnesota
and
Minnesota Rose Society
Cooperating



Tuesday, June 23, 1942
University Farm, St. Paul

Vol. XLV

No. 26

April 27, 1942

Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 12, 1918.

PROGRAM

Auditorium, Administration Building

Professor W. H. Alderman, Presiding

- 8:30 Registration
- 9:30 Address of Welcome..... *Dean C. H. Bailey*
Response..... *Dr. J. H. Vogel*
- 9:45 Roses for the Home
Landscape..... *R. A. Phillips*
- 10:15 Planting and Care of
Garden Roses..... *R. S. Wilcox*
- 11:00 Breeding Hardy Garden
Roses..... *F. L. Skinner*
- 12:00 Rose Varieties..... *L. E. Longley*
- 12:45 Picnic lunch at Como Park picnic
grounds—Free Coffee
- 2:15 Conducted tour of *Minnesota Rose Test
Gardens, Como Park*

This test garden is conducted by the Test Garden Committee of the Minnesota Rose Society. There are approximately 2,000 rose plants of some 400 varieties under test. Mr. William Kaufman, Superintendent of Parks, St. Paul, will cooperate with Mr. Folmer Lauritzen, Horticulturist, St. Paul Park System, who is in charge of the Rose Gardens, and Mr. Fred M. Truax, Commissioner of Parks and Playgrounds, St. Paul, in conducting the tour.

- 3:45 Drive to Lyndale Park Rose Garden in
Minneapolis

Directions: Como Park to Snelling Avenue. South on Snelling to Ford Parkway. West on Ford Parkway over the Ford bridge. Turn left at the Tourist Camp to Godfrey Road. Follow Godfrey Road to Minnehaha Parkway, continuing west on Minnehaha Parkway to Bryant Avenue. Turn right on Bryant Avenue to West 42nd Street. Left on West 42nd Street three blocks to the Rose Gardens.

4:30-6:15 Conducted tour of Lyndale Park Rose Garden

This garden was established some thirty years ago by Theodore Wirth, who was then Superintendent of Parks in Minneapolis, and Mr. Louis Boeglin, Horticulturist, Minneapolis Park Board. This garden is now under the direction of Mr. G. J. Lucking, Acting Horticulturist, Minneapolis Park Board. Here will be seen a particularly good collection of hybrid perpetual roses, as well as some hybrid teas and climbers.

6:30 Dinner at the Hasty Tasty Cafe, Hennepin and Lake, Minneapolis

For reservations write to the Short Course Office, University Farm, St. Paul, before Friday, June 19, 1942. Price, 75 cents.

Mr. F. L. Skinner, honored guest, will speak at this dinner meeting. Colored slides of roses will be shown and discussed.

Mr. F. L. Skinner operates one of the northernmost nurseries in America and a private experiment station devoted to the testing and breeding of super hardy fruit and ornamental plants 250 miles northwest of Winnipeg at Dropmore, Manitoba. The following weather reports dramatically depict the conditions under which Mr. Skinner grows more than 50 acres of nursery stock and experimental plants. The average annual precipitation is about 15.5 inches. Minimum winter temperatures for a 5-year period are as follows:

1936	.....	-44.5° F.
1937	.....	-40.1° F.
1938	.....	-42.5° F.
1939	.....	-50.0° F.
1940	.....	-42.2° F.

Average of daily minimums during January and February for above period, -17.2° F. Under such climatic conditions Mr. Skinner has produced dozens of splendid new varieties of roses, lilacs, lilies, chrysanthemums, and various other ornamental and fruit plants. In recognition of his work Mr. Skinner has received many awards, medals from the Royal Horticultural Society of England, and the coveted Stevenson medal awarded by the Manitoba Horticultural Society.

Garden clubs are especially invited to send a large delegation to Rose Growers' Day!

ADMINISTRATION AND STAFF

- *W. C. Coffey, President, University of Minnesota
- *C. H. Bailey, Dean and Director, Department of Agriculture
- *J. O. Christianson, Director of Agricultural Short Courses
- *W. H. Alderman, Chief, Division of Horticulture
- *L. E. Longley, Chairman, University Committee on Arrangements
- Louis Boeglin, Horticulturist, Minneapolis Park Board
- William Kaufman, Superintendent of Parks, St. Paul
- Folmer Lauritzen, Horticulturist, St. Paul Park System
- G. J. Lucking, Acting Horticulturist, Minneapolis Park Board
- *R. A. Phillips, Instructor, Division of Horticulture
- F. L. Skinner, Manitoba Hardy Plant Nursery, Dropmore, Manitoba, Canada
- Fred M. Truax, Commissioner of Parks and Playgrounds, St. Paul
- Dr. J. H. Vogel, President, Minnesota Rose Society, New Ulm
- R. S. Wilcox, Chairman, Minnesota State Test Garden Committee, and Vice-President, Minnesota Rose Society
- Theodore Wirth, President-Emeritus, Minnesota Rose Society

MINNESOTA ROSE SOCIETY

- Mr. Theodore Wirth, President-Emeritus
- Dr. J. H. Vogel, President
- Mr. R. S. Wilcox, Vice-President
- Dr. L. E. Longley, Secretary-Treasurer

* University of Minnesota.

The Bulletin of the
UNIVERSITY OF MINNESOTA

Accelerate Your Program
at the
University of Minnesota
1942 SUMMER SESSION



Your Country Needs Trained Men
Finish College in Three Years Instead of Four
Do Your Duty by Preparing Yourself Without Delay

ALL COURSES BEGIN JUNE 15

Volume XLV

Number 28

May 6, 1942

Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 12, 1918.

SPEED UP YOUR COLLEGE TRAINING!

The University of Minnesota, in an effort to meet the needs arising from the war effort, has embarked on an accelerated program designed to permit the completion of four years of college work in three years. By means of this program, students registering on or before June 16, 1942, will have the opportunity of taking four quarters of their college work in the following twelve months. Such a program, if continued, will enable a freshman entering the University at the beginning of the Summer Session to complete four years of college work in three calendar years. A sophomore beginning this program on June 16 and continuously pursuing work for nine quarters would finish his course in August, 1944; a junior beginning this program on June 16 would finish in six quarters, or in December, 1943; and a senior would complete his work in three quarters, or in March, 1943.

The accelerated course is compulsory in the Medical School, the School of Dentistry, and the College of Pharmacy and optional in the Institute of Technology and the Law School. The College of Science, Literature, and the Arts, the College of Education, the School of Business Administration, and the College of Agriculture, Forestry, and Home Economics are also offering courses during the Summer Session which permit the student to accelerate his program. Actually, it is possible through Summer Session attendance for a student to accelerate his progress toward graduation in any field.

Students will also have opportunity through the regular program of the 1942 Summer Session to take special subjects designed for war training and for the study of post-war problems. The following are illustrative of some of the fields of study provided:

Architecture	Law
Art Education	Mathematics
Astronomy (Navigation)	Medicine
Business Administration	Nursing
Dentistry	Pharmacy
Economics	Physics
Education	Portuguese (elementary)
Engineering	Reserve Officers' Training Corps
Forestry	Russian (elementary)
German	Sociology
History	Spanish

COLLEGE OF PHARMACY

The College of Pharmacy will accelerate its program for all classes beginning the summer of 1942. This means that a student entering at the beginning of the summer quarter, 1942, will pursue his studies for twelve consecutive quarters and, if he encounters no scholastic difficulties, may complete the requirements for the bachelor of science in pharmacy by June, 1945. The length in weeks and the quality of the instruction will be equal in every respect to that now offered in the pharmacy course of four years of three quarters each. Application for admission forms may be obtained from the director of admissions and records. These should be completed and returned

as soon as possible. New entering students will register for the summer quarter on June 15 and 16. Summer quarter classes begin June 17.

Those students who will have completed the required and elective courses contained in the first year of the pharmacy curriculum by June, 1942, should plan to enroll in the College of Pharmacy as sophomores at the beginning of the 1942 summer quarter, as no beginning sophomores will be admitted in the fall of 1942.

Special attention of those high school students contemplating entering the College of Pharmacy with *advanced academic standing* is directed to the following statement: in the past, a number of high school students have pursued the required and elective subjects of the first year of the pharmacy curriculum at some recognized school other than the University of Minnesota and then enrolled the following September with advanced academic standing as sophomores in the University of Minnesota College of Pharmacy. Students wanting to do so this coming year should enroll at the beginning of the summer either at some academic college that is on an accelerated basis or in the College of Pharmacy of the University of Minnesota. This is necessary because freshmen entering the College of Pharmacy at the beginning of the 1942 summer quarter will commence their sophomore studies at the beginning of the spring quarter (March), 1943, and if a student wishes to enter with advanced standing when the sophomore professional work begins, he must have completed the three quarters of freshman studies by the latter part of March, 1943. Freshmen will be admitted only at the beginning of the summer quarter on June 16, 1942.

LAW SCHOOL

Courses will be offered during the 1942 Summer Session for both beginning and advanced students in the Law School. Students with two years of college work are admitted to courses totaling four years for the degrees of B.S. and LL.B. By attending Summer Sessions, these courses may be completed in three calendar years. Students with a B.A. or equivalent degree are admitted to a three-year course for the LL.B. By attending Summer Sessions, this course may be completed in two-and-one-quarter calendar years. For further information, write to the Law School, University of Minnesota, Minneapolis, Minnesota.

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

It is recommended that freshmen in agriculture or in forestry or in home economics enter in the fall quarter. Most prospective freshmen in agriculture and forestry can be profitably employed in the summer in national defense by engaging in farm labor or other agricultural work. If, however, freshmen in either agriculture or forestry desire to enter in the Summer Session, fairly satisfactory programs of study can be arranged, altho technical forestry and agricultural subjects usually offered to freshmen will not be available until the fall quarter. It is possible that some technical courses in home economics may be available to entering freshmen. All prospective freshmen in the College of Agriculture, Forestry, and Home Economics are requested to communicate with the dean of the college before entering.

SCHOOL OF ARCHITECTURE

The offerings of the Summer Session, consisting of approximately ten consecutive weeks of laboratory work, will include Architectural Design, Drawing and Painting, and Modeling. Attendance during the summer will enable students to shorten the present five-year curriculum of the School of Architecture.

RESERVE OFFICERS' TRAINING CORPS

The Department of Military Science and Tactics is offering regular elementary and advanced courses during the 1942 Summer Session, beginning on June 15. A list of these courses will be sent upon request by the director of the Summer Session, University of Minnesota, Minneapolis, Minnesota.

NAVIGATION

The Department of Astronomy has added Astronomy 20su to its summer offerings. This course will deal with the basic facts of celestial navigation in accordance with the specifications of the Army Air Corps.

For further details, students should see the Summer Session Bulletin and the bulletin of the college or school in which they are interested. Bulletins may be obtained upon request from the Office of Admissions and Records or the Director of the Summer Session, University of Minnesota, Minneapolis, Minnesota.

Students are advised to consult the office of the dean of the school or college in which they wish to register and to watch for additional announcements concerning the departments mentioned in this bulletin and other departments of the University.

The Bulletin of the
UNIVERSITY of MINNESOTA

Graduate School and
School of Business Administration

SPECIAL WAR AND DEFENSE TRAINING
IN
PRODUCTION MANAGEMENT
AND
PERSONNEL MANAGEMENT



A One-Year Graduate Course Leading to the M.B.A. Degree

Volume XLV, Number 29

May 9, 1942

Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 12, 1918

**SPECIAL WAR AND DEFENSE TRAINING
IN
PRODUCTION MANAGEMENT
AND
PERSONNEL MANAGEMENT**

A ONE-YEAR GRADUATE COURSE LEADING TO THE M.B.A. DEGREE

The School of Business Administration of the University of Minnesota has recognized, during recent months, an increasing demand for specialists trained in the two related fields of production and personnel management. A survey of man power requirements undertaken by the American Council on Education and the Bureau of Labor Statistics for the use of the National Selective Service Administration has presented evidence of shortages in these two fields both within the military service and in war industries throughout the nation. In recognition of these conditions the National Headquarters of the Selective Service System issued a memorandum to state directors in November, 1941, indicating that qualified personnel and students in industrial management should be considered for occupational deferment. The further expansion of war production, both by military and nonmilitary plants will make these shortages even more acute than they are today.

The School of Business Administration has for many years provided specialized training in these fields at both the graduate and undergraduate levels. It has now undertaken a special program designed to facilitate and speed the preparation of properly qualified graduate students for these shortage fields.

PURPOSE

The curricula as set forth below lead to the M.B.A. degree and provide instruction in either or both of the specialized fields of production management and personnel management. Successful completion of the program will prepare students to take their place in a supervisory capacity in plants producing war materials or in the military services.

The special training thus provided will prepare graduates for positions as junior supervisors and functional specialists in arsenals and essential war industries. It will familiarize students in both sequences with the problems and techniques involved in production planning and control, time and motion study, work simplification, industrial cost analysis, job analysis, selection of employees, employee compensation and rating, collective bargaining, and other important functions of modern management.

LENGTH OF TIME REQUIRED

The curricula thus arranged are intended for graduates who have completed the work for the bachelor of business administration degree or the equivalent of such course work. For such qualified graduate students the special program in this field will require a minimum of nine months of full-time graduate work.

For graduates of a liberal arts college some additional background courses will be required, which will necessitate a longer period for completion of the program.

Graduates of the several branches of engineering, by electing the proper business and economics courses in their undergraduate work, generally can complete the program for the M.B.A. within the one-year period.

OUTLINE OF COURSES

Forty-five credits of graduate courses are required for each of these curricula leading to the M.B.A. degree. There is no thesis requirement. The courses available for the degree have been selected especially to meet the needs of the present situation. They permit specialization in each of the shortage fields mentioned above.

PRODUCTION MANAGEMENT CURRICULUM

The required courses for the M.B.A. degree for those who wish to specialize in production management are as follows:

	Credits
Scientific Management (B.A. 184).....	3
Senior Topics: Production Management (B.A. 181-182G).....	6
Motion Economy (B.A. 170).....	3
Production Standards (B.A. 171).....	3
Standard Costs (B.A. 133).....	3
Vocational Psychology (Psy. 130).....	3
Senior Topics: Marketing (B.A. 180C).....	3
Senior Topics: Personnel Management (B.A. 180D).....	3
Seminar in Industrial Management (Econ. 281).....	3
<hr/>	
Total Specific Requirements.....	30
Electives*	15
<hr/>	
Total	45

PERSONNEL MANAGEMENT CURRICULUM

Courses included in the curriculum designed to prepare students for positions in personnel management and the M.B.A. degree are as follows:

	Credits
Senior Topics: Personnel Management (B.A. 180-181-182D).....	9
Seminar in Industrial Relations (Econ. 251).....	3
Scientific Management (B.A. 184).....	3
Standard Costs (B.A. 133).....	3
Motion Economy (B.A. 170).....	3
Production Standards (B.A. 171).....	3
Vocational Psychology (Psy. 130).....	3
Personnel Psychology (Psy. 160).....	3
<hr/>	
Total Specific Requirements.....	30
Electives*	15
<hr/>	
Total	45

Students who as undergraduates have taken some of the required courses will be permitted to make appropriate substitutions. It should be noted, however, that, for graduate students, one quarter of the Senior Topics Course will consist of supervised field training in the personnel department of a government agency or industrial concern.

* R.O.T.C. and N.R.O.T.C. courses may be used as elective credits.

ADMISSION

These courses are open to students who meet the admission requirements for the Graduate School.

Admission to the special graduate courses in production and personnel management is limited to graduates of a recognized college or university who have completed the equivalent of the required course work for the bachelor of business administration degree as specified at the University of Minnesota. These requirements may be outlined as follows:

1. **Prerequisites.**—Candidates must meet the prebusiness requirements of the School of Business Administration in accounting, money and banking, principles of economics, statistics, and general psychology. Preparation in these prebusiness subjects, if not completed as part of the candidate's undergraduate program, may be completed after entrance upon the work for this degree by taking the appropriate courses.

2. **Core group courses.**—Candidates who have not taken the core group courses required for the degree of bachelor of business administration in this University must do so as part of the work for the Master's degree. These courses are business law, advanced money and banking, advanced general accounting or cost accounting, corporation finance, marketing, business statistics, production management, advanced general economics, labor problems, public finance, personnel administration, and government and business.

A satisfactory level of scholarship must have been maintained in such undergraduate work.

The course is open to both men and women. It has already become evident that a large number of women will be required to replace men in some of the work in personnel, business administration, and production management. This program will afford an opportunity for them to prepare for such positions.

The University Committee on Deferment has recognized a demonstrated scarcity in these fields and, when circumstances seem to justify, will support requests for deferment for graduate students who are making satisfactory progress.

Students may enter at the beginning of any of the terms, either in the Summer Session or during the regular school year. For the year 1942-43 the opening dates are as follows:

I Summer Session.....	June 15, 1942
II Summer Session.....	July 27, 1942
Fall quarter.....	September 24, 1942
Winter quarter.....	January 2, 1943
Spring quarter.....	March 26, 1943

Applications for admission should be addressed to the dean of the Graduate School. Further information concerning the program may be obtained by addressing the Dean, the School of Business Administration, University of Minnesota, Minneapolis, Minnesota.

Students should retain this bulletin for use throughout the year.

The Bulletin of the
UNIVERSITY of MINNESOTA

Institute of Technology
1942-1944

General Information and Curricula



Volume XLV, Number 30

May 11, 1942

*Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota.
Accepted for mailing at special rate of postage provided for in Section 1103, Act of
October 3, 1917, authorized July 12, 1918*

CONTENTS

	Page
Admission	7
Advanced standing	7
Attendance	9
Bulletin changes	14
Courses and degrees	6
Credit for outside work	8
Curricula	15
Aeronautical Engineering	16
Aeronautical Engineering with Business Administration	41
Agricultural Engineering	19
Agricultural Engineering with Business Administration	42
Architecture	22
Architecture, Interior	26
Chemical Engineering	31
Chemical Engineering with Business Administration	44
Chemistry	28
Civil Engineering	32
Civil Engineering with Business Administration	46
Electrical Engineering	36
Electrical Engineering with Business Administration	48
Engineering and Business Administration	39
Engineering Prebusiness	52
Geological Engineering	58
Geophysics	54
Mechanical Engineering	54
Mechanical Engineering with Business Administration	50
Metallurgical Engineering	63
Mining Engineering	59
Petroleum Engineering	61
Physics	65
Elective courses	68
Extension courses	8
General information	4
Inspection trips	9
Registration	7
Requirements for graduation	9
Reserve Officers Training Corps	13
Scholarships and prizes	11
Societies	14
Unit of credit	8

INSTITUTE OF TECHNOLOGY

EMBRACING THE COLLEGE OF ENGINEERING AND ARCHITECTURE, THE
SCHOOL OF CHEMISTRY, AND THE SCHOOL OF MINES AND METALLURGY

ADMINISTRATION

- Walter C. Coffey, M.S., LL.D., President
Samuel C. Lind, Ph.D., D.Sc., Dean and Professor
Ora M. Leland, B.S., C.E., Dean of Administration
Charles A. Koepke, M.S.(M.E.), Administrative Assistant (Engineering and Architecture)
Lloyd H. Reyerson, Ph.D., Administrative Assistant (Chemistry)
Elting H. Comstock, M.S., Administrative Assistant and Chairman of Advanced Standing Committee (Mines and Metallurgy)
Howard D. Myers, B.S.(C.E.), Chairman of Advanced Standing Committee (Engineering and Architecture)
I. William Geiger, Ph.D., Chairman of Advanced Standing Committee (Chemistry)
Carl A. Herrick, M.E., Chairman of Registration, Schedule, and Admissions Committees
Lillian Cohen, Ph.D., Chairman of Registration and Schedule Committees (Chemistry)
Edwin M. Lambert, M.E., Chairman of Schedule Committee (Mines and Metallurgy)
Washington D. Lacabanne, M.S., Chairman of Registration Committee (Mines and Metallurgy)
M. Cannon Sneed, Ph.D., Chairman of Freshman Students' Work Committee
Robert W. French, B.S.(C.E.), Chairman of Students' Work Committee (Engineering and Architecture)
Norville C. Pervier, Ph.D., Chairman of Students' Work Committee (Chemistry)
Louis S. Heilig, E.M., Chairman of Students' Work Committee (Mines and Metallurgy)
Charles A. Koepke, M.S.(M.E.), Chairman of Students' Work Committee for Five-Year Combined Courses
George Filipetti, Ph.D., Secretary of Students' Work Committee for Five-Year Combined Courses
Hervey H. Barber, Ph.D., Superintendent of Supply and Equipment (Chemistry)

GENERAL INFORMATION

INSTITUTE OF TECHNOLOGY

The Institute of Technology was established by action of the Board of Regents on October 19, 1935, to embrace the College of Engineering and Architecture, the School of Chemistry, and the School of Mines and Metallurgy, effective November 1, 1935.

COLLEGE OF ENGINEERING AND ARCHITECTURE

The College of Engineering and Architecture had its beginning in the College of Agriculture and the Mechanic Arts which was authorized by the legislative act of 1868. Courses in Civil and Mechanical Engineering were first offered in 1871. In the reorganization of the University, in 1872, the College of Mechanic Arts was established. It became the College of Engineering, Metallurgy, and the Mechanic Arts in 1892, the College of Engineering and the Mechanic Arts in 1897, and the College of Engineering and Architecture in 1916. A course in Electrical Engineering was first offered in 1887. Architecture was announced in 1912. In 1925, the name of the Department of Architecture was changed to the School of Architecture. The Agricultural Engineering course was offered in 1925, and the courses in Aeronautical Engineering in 1928. Combined courses with Business Administration were established in 1934.

The departments of this college occupy the following buildings on the Main campus: Main Engineering, Electrical Engineering, Mechanical Engineering, and the Experimental Engineering Laboratories. Portions of the School of Chemistry, Pillsbury Hall, and the Armory are also utilized. The Hydraulic Laboratory is situated at the St. Anthony Falls of the Mississippi River about a mile upstream from the campus. Agricultural Engineering has its own building on the Agricultural campus. The libraries of Engineering and Architecture are situated in the Main Engineering Building.

The purpose of this college is to give the students a broad foundation in the fundamental principles of engineering and architecture, together with sufficient knowledge of professional practice to enable them to apply those principles successfully. It is not possible in college to educate a fully trained engineer, as the application of the principles to the practice of engineering is to be learned through experience. There are certain subjects, such as surveying and drafting, in which some proficiency is required. This enables a student upon graduation to fill satisfactorily a subordinate position while obtaining a basis for growth and advancement.

It is intended that all of the technical courses given in this college shall be taught by men who have had practical experience in their respective fields in addition to their professional training.

The fields of engineering and architecture are very broad and are continually becoming more extensive. From the technical lines of design, construction, maintenance, and operation, which have always belonged to them, the trained engineer and architect have been drawn into the business world to occupy positions of an executive character. To meet the demand for such service, the importance of the broader training in economic and commercial principles and industrial relations is recognized.

Withal, it is intended that the young graduate shall have obtained material assistance in developing those traits of character which will make him a loyal and exemplary citizen and a true gentleman.

SCHOOL OF CHEMISTRY

The School of Chemistry was established in 1897 as a school of analytical and applied chemistry, subsidiary to the College of Science, Literature, and the Arts. In 1904 it was made a separate unit of the University, and in 1919, its present name was adopted, and its administration was correlated with that of the College of Engineering and Architecture under one dean.

The courses in Chemistry and Chemical Engineering were developed from the beginning of the school. The course in Physics was established in 1936.

The school occupies a large modern building, 180 x 200 feet, having six floors. Its laboratories are designed to afford facilities for instruction in the various branches of chemistry. The Chemistry library is well provided with complete sets of journals and compendia of chemical literature, among which are important sets not frequently found in university libraries. Many special laboratories for private research have been provided and ample facilities are available for graduate work leading to the higher degrees.

SCHOOL OF MINES AND METALLURGY

The School of Mines and Metallurgy was established by the Board of Regents in 1888, upon recommendation of the general faculty of the University. A course in Mining and Metallurgy was announced in 1889. The school was affiliated with the College of Engineering, under the name of the College of Engineering, Metallurgy, and the Mechanic Arts, until 1897, when the School of Mines was made an independent college. In 1926 the name was changed to School of Mines and Metallurgy.

The school occupies the building provided by the Legislature of 1913. This building contains the library of the school together with the offices, classrooms, drafting rooms, and laboratories necessary to administer the courses in Mining, Metallurgy, Metallography, and Petroleum Engineering. For other fields of work necessary to the completion of well-rounded curricula advantage is taken of the instruction afforded by various departments in other units of the University.

The Mines Experiment Station was established by the Board of Regents in 1911. It occupies a specially constructed laboratory building of which a portion is assigned to the North Central Station of the United States Bureau of Mines.

The mining districts of Minnesota are within a few hours of Minneapolis by rail or paved road. The heartiest co-operation exists between the officials of the various mining companies and the school. As a result, the mining properties are at all times open to parties from the school for observation and study trips. Practical surveying, geological field work, and underground work are carried on in one or more of the districts.

Ample opportunity for field work in metallurgy is also available. Numerous fabrication and heat treating plants are located in the Twin Cities. Plants for the study of smelting and other processes can be reached with not more than an overnight trip by rail.

Students in the School of Mines and Metallurgy have, therefore, all the advantages afforded by a large university combined with ample opportunity for field observation and experience.

ENGINEERING EXPERIMENT STATION

The Engineering Experiment Station of the Institute of Technology provides facilities for graduate research and technical investigations in a variety of fields. The St. Anthony Falls Hydraulic Laboratory located on Hennepin Island, and the Oak Street Laboratories on University Avenue are exceptionally well adapted to special large-scale investigations, many of which may be profitably conducted in co-operation with technical societies, associations, and industries. Several investigations of this type are now under way and pro-

vide an opportunity for advanced students in the institute to come in contact with industrial and technical problems. In many cases the projects provide graduate fellowships and part-time employment for advanced students.

COURSES AND DEGREES

The College of Engineering and Architecture offers four-year courses of study in Aeronautical, Agricultural, Civil, Electrical, and Mechanical Engineering, and a five-year course in Architecture. These courses lead to the degree of bachelor of aeronautical, agricultural, civil, electrical, or mechanical engineering, or architecture. In some of the courses, optional groups of electives are arranged for the guidance of students who desire to devote special attention to certain fields.

The Engineering Prebusiness course requires the first two years of work in this college. This is followed by two years in the School of Business Administration upon the completion of which the degree of bachelor of business administration is conferred.

In co-operation with the College of Science, Literature, and the Arts, a six-year course in Arts and Architecture is offered. It leads to the degrees of bachelor of arts, at the end of four years in the College of Science, Literature, and the Arts, and bachelor of architecture at the end of the sixth year in the Institute of Technology.

The School of Chemistry offers four-year courses in Chemistry, Chemical Engineering, and Physics, leading to the degrees of bachelor of chemistry, bachelor of chemical engineering, or bachelor of physics, respectively.

Five-year combined courses in Engineering or Chemistry with Business Administration lead to two Bachelor's degrees, one in each of the two fields.

The School of Mines and Metallurgy offers four-year courses in Mining, Geological, Petroleum, and Metallurgical Engineering leading to the respective degrees of bachelor of mining engineering, B.Min.E.; bachelor of geological engineering, B.Geol.E.; bachelor of petroleum engineering, B.Pet.E.; and bachelor of metallurgical engineering, B.Met.E.

These colleges also offer work in the Graduate School leading to the Master's degree in the appropriate branch of engineering, in architecture, or in chemistry, or to the Doctor's degree.

The professional degree of aeronautical, agricultural, chemical, civil, electrical, geological, mechanical, metallurgical, mining, or petroleum engineer will be conferred upon those who have received the degree of bachelor of aeronautical, agricultural, chemical, civil, electrical, geological, mechanical, metallurgical, mining, or petroleum engineering, when they have completed the equivalent of one additional year's college work, four years of engineering experience in positions of responsibility, and have presented a satisfactory professional thesis.

Graduates of these colleges may be granted permission to pursue the year of graduate study *in absentia* under the direction of the faculty. It is recommended, however, that this year be spent in residence at this University and that the Master's degree be obtained in this manner. There are many advantages in taking this year immediately following graduation, thus making a five- or six-year course leading to the Master's degree in the corresponding branch of engineering or in architecture. Then after four years of approved experience and the preparation of the professional thesis, the Engineer degree may be obtained. This procedure is especially recommended to those students whose undergraduate work is of high grade and who desire additional preparation for the higher positions which require strong character and leadership.

Candidates for the Engineer degrees register in the Graduate School.

ADMISSION

Detailed information concerning admission, entrance requirements, advanced standing, and expenses will be found in the Bulletin of General Information which will be sent to any address upon application to the director of admissions and records, University of Minnesota.

Time of admission.—The regular time to enter the institute is in September. However, students will be admitted at the beginning of the winter quarter in January. Such students must have entrance credits in higher algebra and solid geometry and should have credits in high school chemistry. Students cannot be admitted at the beginning of the spring quarter, since no beginning courses in mathematics, chemistry, English, or drawing are given in this quarter.

ADVANCED STANDING

Students who have pursued courses of study in other colleges of recognized standing may receive advanced credit under the rules of the University and of the institute. See Requirements for Graduation.

Students transferring from other accredited colleges to the Institute of Technology will receive credit in only those courses in which they present a grade of at least C.

A student entering the School of Chemistry as a sophomore (48-101 required credits) may transfer not more than one half of the total number of elective credits allowed for graduation; in the same manner a junior (102 or more required credits) will be permitted to transfer only three quarters of the total number of elective credits allowed for graduation.

REGISTRATION

All undergraduate students are required to pay the prescribed fees to the university bursar at the beginning of each quarter. Necessary classification blanks showing the courses a student expects to pursue are to be filled out and filed either at the beginning of the fall quarter for the entire year or at the beginning of each quarter during the college year. Classification and enrolment of students registering in Aeronautical, Agricultural, Civil, Electrical, Mechanical, or Prebusiness Engineering and Architecture take place in the Main Engineering Building; for those registering in Chemistry, Chemical Engineering, and Physics in the Chemistry Building; and in Mining, Metallurgical, Geological, and Petroleum Engineering in Appleby Hall.

All students entering the institute for the first time must send or present their credentials to the director of admissions and records of the University, who will notify each applicant in regard to his admission. Before registering, all new matriculants are required to take a physical examination, and the following tests:

1. Co-operative English test.
2. Impromptu English theme.

On the basis of his standing in these tests and his scholarship rank in preparatory school, a student will be classified in one of the two groups in English as follows:

1. Required to take English 4-5-6, nine (9) credits in composition.
2. Required to make up minimum essentials as a preliminary to English 4-5-6.

Any student who takes these tests when they are given in the high school and preparatory schools of the state and who applies for admission to the University before September 1 will be mailed a card showing his classification in English. Those who have not taken the tests will be required to take them on Friday or Saturday preceding the regularly scheduled Freshman Week. *No freshman will be allowed to register without presenting a card giving his assignment in English.*

Students should consult the university calendar in regard to registration dates.

Students will not be allowed to register for more than 19 credit hours without the approval of the Students' Work Committee.

Back work must be taken in preference to new work.

A substitution for formal prerequisites for any course must be approved by the department concerned.

Freshmen are not permitted to take additional courses (except Military or Naval Science and Tactics) without permission of the Freshman Students' Work Committee.

No change in registration will be permitted later than 10 days after the beginning of the quarter. A late fee of \$2 is charged for changes in registration made after the second day of the quarter.

UNIT OF CREDIT

The standard unit of credit in the University is the quarter credit, or simply, the *credit*. It corresponds to one class period per week for one quarter. This class period may be a one-hour lecture or recitation, or a two- or three-hour class in laboratory, drawing, surveying, or computations, but in any case one credit is supposed to require three actual hours of the average student's time per week for one quarter. One hour of recitation is assumed to require two hours of preparation or study. A two-hour laboratory period may require one hour of home work to complete the credit. A three-hour period usually carries one credit without additional work outside of class. The credit allowed for a lecture may be from one-third to one hour depending upon the amount of outside work or study required in connection with it.

CREDIT FOR OUTSIDE WORK

Credit for certain courses, as a result of work done outside of the regular classes, may be obtained by satisfactorily passing comprehensive examinations. This includes work done in extension classes, by correspondence study, by the aid of a private tutor, by individual study, through practical experience, or otherwise.

The comprehensive examination will be of such thoro and searching character as to determine whether the student has done all the work of the course. It should require at least three times the work of the usual *final* or condition examination and will be conducted by a committee appointed by the head of the department in which the course is given.

Permission to take the examination must be obtained from the Students' Work Committee, and the usual fee of \$5 for each special examination must be paid unless it be taken within six weeks after first entering the University.

EXTENSION COURSES

Courses in engineering, architecture, and chemistry are offered by the General Extension Division of the University in evening classes and by correspondence study. Persons who are unable to attend the regular university courses may obtain valuable instruction in this manner.

Credits will be accepted from the Extension Division for the following types of courses:

1. Nontechnical courses taken in residence (residence as defined by the University Senate ruling).
2. Such other residence courses as have been approved by the department concerned of the Institute of Technology and by the dean, which courses shall have been designated as credit courses by the Extension Division.
3. Credits obtained by correspondence study courses in College Algebra, Trigonometry, and Analytic Geometry not to exceed a total of 15 credits, and in English and in other subjects not required in the student's curriculum not to exceed a total of 9 credits, will be accepted.

ATTENDANCE

It is expected that all students will be regular in attendance at all class exercises and that they will do all the work of their courses. Neglect of work, as indicated by irregularity in attendance or low scholarship, will be sufficient reason for exclusion from class. Any student who has unexcused absences equal to the number of credits in a course, but in no case less than two, may be dropped from the class with a record of failure in the course.

INSPECTION TRIPS

All seniors registered in Chemical Engineering are required to go on a trip of inspection and observation through certain large industrial plants. This trip is usually taken during the spring vacation and is under the personal supervision and guidance of members of the faculty. It includes plants in Milwaukee, Chicago, and near-by points. The expenses of the trip are minimized as far as possible, and must be defrayed by the individual student. They amount to from \$75 to \$100 per student.

Seniors in Aeronautical Engineering are required to take an inspection trip during the spring vacation to visit aeronautical manufacturing, operating, and research establishments in the central and eastern portions of the United States. The expense to each student is estimated at about \$75.

In Mines and Metallurgy, field trips are required at the end of the sophomore and junior years. The sophomore trip embraces mine surveying on the iron ranges in northern Minnesota for four weeks beginning about June 15, the expense amounts to about \$60. Field work in geologic mapping is also required. The junior mining and nonferrous metallurgy, and petroleum trips cover a study of mine plants and operations in leading mining or oil fields in the western part of the country for nearly three weeks beginning early in September. Reports on the junior field trips of the School of Mines and Metallurgy must be prepared under the direct supervision of the department concerned, beginning the first day of the fall quarter and continuing for a period of two weeks. A limited program will be carried in addition to work on the field report. Final reports must be typewritten and contain drawings, to scale, made from the field sketches, covering operations, and details of plants and equipment. These reports shall become the property of the school. Class work in the remaining subjects of the first quarter, senior year, will begin when the field work reports are accepted. The expense amounts to approximately \$125. The junior geology trip embraces standard types of geological field work in the Black Hills region. The expense amounts to about \$100. The junior ferrous metallurgy trip includes inspection and reports from iron and steel plants, fabrication plants, and heat treating plants in the Middle West. The expense amounts to approximately \$100.

An inspection trip for electrical engineers, carrying two credits, and under faculty supervision, is a required part of the senior curriculum. Industrial plants in Minnesota and neighboring states are visited. The trip is taken during the spring vacation. Costs are borne individually by the student. Expense is estimated at about \$40.

Seniors in Mechanical Engineering are required to take an inspection trip during the spring vacation to various industrial plants to study mechanical equipment, manufacturing methods and processes. The expense to each student is estimated at about \$40.

The inspection trips for aeronautical, electrical, and mechanical engineers are subject to cancellation during the war.

REQUIREMENTS FOR GRADUATION

To be recommended for the degree of bachelor of aeronautical, civil, electrical, or mechanical engineering, chemistry or physics, the student must satisfactorily complete all of the courses prescribed in the corresponding curriculum together with sufficient

electives to make a total of at least 207 credits. In the five-year course in Architecture, 225 credits are required for graduation. In Agricultural Engineering 210 credits are required for graduation. For the degree of bachelor of interior architecture, the requirements are 192 credits, including all required courses, plus 90 honor points from the first two years. For the degree of bachelor of chemical engineering, 218 credits are required. For the degree of bachelor of business administration in combination with engineering or chemistry, a student must complete the requirements for the Bachelor's degree in one of the engineering or chemistry curricula and include the 74 prescribed credits in business subjects. In Mining and Petroleum Engineering a total of 235 credits must be completed. Metallurgical Engineering requires 222 credits and Geological Engineering, 233 credits.

Students entering with advanced standing from other colleges or universities must spend at least one year in residence here before they will be recommended for graduation. If the term of residence is only one year it must be the senior year; and in any case such a student must spend two "quarters" of his senior year in residence.

College of Engineering and Architecture
School of Mines and Metallurgy

Every student entering the College of Engineering and Architecture or School of Mines and Metallurgy on or after the fall of 1940 will be required to have a *cumulative honor point average* of at least 1.00 in order to be eligible for a degree.

School of Chemistry

1. Students registered in the School of Chemistry shall be assigned honor points on the completion of any course.

2. As a requirement for graduation, a student must obtain at least one honor point per credit in each quarter of the prescribed courses of the freshman and sophomore years in inorganic chemistry and qualitative analysis, and an *average* of one honor point per credit in Analytical Chemistry 1-2. The satisfying of this requirement in any quarter of the courses in inorganic chemistry and qualitative analysis is a prerequisite to registration for work of any succeeding quarter. A student who fails to satisfy this requirement in any course must repeat the course in class the next time the course is offered.

3. As a requirement for graduation a student must obtain an average of at least one honor point per credit for his total work in courses which do not belong to his freshman or sophomore years.

EXCESS HONOR POINTS AND QUALITY CREDITS

4. The term "excess honor points," for any course is defined as the total number of honor points received by a student for that course minus the number of honor points associated with a grade of C.

5. For every course in which a student obtains a grade above C he shall receive not only the stated credits for the course but, in addition, quality credits equal to the excess honor points divided by the factor ten. These quality credits are to be accepted on the same basis as the nominal or stated credits in satisfying the credit requirement for graduation.

SPECIAL REGULATIONS FOR STUDENTS PROCEEDING TO THE DEGREE OF
BACHELOR OF CHEMISTRY

6. Students who at the end of the junior year have an honor point average of less than 1.9 in all courses taken while registered in the school will pursue in their senior year the prescribed curriculum and will be eligible for graduation when their total credits

(stated plus quality) amount to the required number, namely 207. Students with an honor point average *close to 1.9* should be able, in the spring quarter of their senior year, to register in the Graduate School and obtain *some* residence and graduate credit.

7. A student who at the end of the junior year has an honor point average of more than 1.9 in all courses taken while registered in the school will pursue in his senior year *a course of study prescribed for him* by an adviser after thoro study by the adviser of the needs, qualifications, and desires of the student. Toward the end of his junior year or at the beginning of his senior year, the student shall select an adviser from among the chiefs of the divisions of the school. An adviser so selected may delegate his duties in this connection to a member of his staff.

8. As soon as the senior student, following the course of study prescribed by his adviser, has accumulated a total of 207 quarter credits (stated plus quality) he shall be eligible to be recommended for the Bachelor's degree.

SPECIAL REGULATIONS FOR STUDENTS PROCEEDING TO THE DEGREE OF BACHELOR OF CHEMICAL ENGINEERING

9. Students in the Chemical Engineering Curriculum will be recommended for graduation when they have *completed the prescribed courses*, have satisfied the requirements of paragraphs (2) and (3), and have accumulated at least 218 quarter credits (stated plus quality). Students whose honor point average at the end of the junior year *does not greatly exceed unity* will register in the senior year for the prescribed courses and usual electives. Students with an honor point average *considerably greater than unity* will consult with the chief of the Department of Chemical Engineering or with an adviser assigned by him, who will *prescribe the work* to be undertaken in the senior year. In exceptional cases, the adviser is authorized to *waive the requirement* that any given courses are prerequisite to graduation. In any case, gifted students will be able in the spring quarter of their senior year to obtain credit in the Graduate School for an appreciable fraction of the work of that quarter.

SPECIAL REGULATIONS FOR STUDENTS PROCEEDING TO THE DEGREE OF BACHELOR OF PHYSICS

10. As soon as the senior student, following the course of study prescribed by his adviser, has accumulated a total of 207 quarter credits (stated plus quality) he shall be eligible to be recommended for the Bachelor's degree.

STUDENTS ENTERING WITH ADVANCED STANDING

11. The above regulations shall apply to students entering with advanced standing as far as the work taken by them after entering the University of Minnesota is concerned. Honor point averages and quality credits will be computed from grades received in courses taken at the University of Minnesota.

SCHOLARSHIPS AND PRIZES

Research fellowships.—In the Engineering Experiment Station research fellowships are available from time to time which are open to engineering graduates, including chemical engineers. The holder is required to give twenty hours per week, that is, about half of his time, to such research service as may be assigned him. In addition he is expected to carry half-time work in the Graduate School toward an advanced degree.

Teaching fellowships in civil and electrical engineering are open to graduates in these fields. Each fellow renders part-time service in instruction while pursuing graduate study.

The Shevlin Fellowship in Chemistry.—The Shevlin Fellowship in Chemistry, established by the late Thomas H. Shevlin, of Minneapolis, is awarded annually and yields \$500. Candidates for this fellowship should file their application before March 1 with the dean of the Graduate School. The Shevlin fellow devotes his entire time to graduate work and is not required to render any service to the University.

The du Pont Fellowship in Chemistry.—This fellowship was founded by E. I. du Pont de Nemours and Company, Wilmington, Delaware, and yields \$750 annually. The holder devotes his entire time to graduate work and is not required to render any service to the University. Applications for this fellowship should be submitted to the dean of the Institute of Technology before March 15.

The Hormel Fellowships in Chemical Engineering and Organic Chemistry.—In the establishment of the Hormel Foundation at the University of Minnesota by the Hormel Company of Austin, Minnesota, provision was made for two fellowships of \$750 each in the School of Chemistry. The holder devotes his entire time to graduate work and is not required to render any service to the University. Applications for this fellowship should be submitted to the dean of the Institute of Technology before March 15.

The Superior Metal Products Research Fellowship in Metallurgy.—This fellowship is awarded to a qualified graduate student devoting half time to research on tin plate and the remainder to graduate work. It yields \$600 annually. Candidates should file application before March 15 with the dean of the Institute of Technology.

Fellowships in public administration.—The University of Minnesota awards annually a limited number of *pre-service fellowships in public administration* to college and university graduates without previous experience in government service. These fellowships carry stipends of \$650 plus an additional amount sufficient to pay tuition and fees in the Graduate School. Holders of these fellowships devote their entire time to graduate study. They are open to graduates of professional and technical schools, preference being given to applicants who have had preparation in political science and related social sciences. Upon the satisfactory completion of a year of resident study, the fellowship will be renewed for a second year to provide internship training with some governmental agency in the particular field of government service in which the student is especially interested.

The University also offers several *in-service fellowships in public administration* to college and university graduates who are employed in government service and who have been in such service for at least three years. The stipends for these fellowships vary from \$1,000 to \$1,500. The period of training includes the three quarters of the regular academic year and the first term of the Summer Session. Persons holding professional and technical positions in national, state, and local governments are eligible to apply. Preference is given to those who have had at least some preparation in political science and related social sciences.

Assistants.—The School of Chemistry employs 42 graduate assistants at from \$500 to \$600 per year, on part time. They devote from eight to twelve hours per week to instruction and other assigned work, thereby obtaining valuable experience in laboratory teaching under competent direction. In addition to these duties, each assistant is expected to pursue graduate work toward a higher degree. Application should be made to the dean of the Institute of Technology.

Prizes.—Various prizes in the University are open to students in these colleges. Certain prizes are awarded to students in Engineering only, such as the prizes of the Northwestern section of the American Society of Civil Engineers and the Twin Cities section of the American Society of Mechanical Engineers. The Tau Beta Pi, Chi Epsilon, Eta Kappa Nu, and Pi Tau Sigma, honorary engineering fraternities, also offer prizes.

Two prizes are open to sophomores in Chemistry and Chemical Engineering. These have been established by Phi Lambda Upsilon, honorary chemical fraternity, and the Twin

City Alumni Association of Alpha Chi Sigma, chemical fraternity. The chemistry faculty offers a prize to seniors.

Prizes and medals are open to students registered in the School of Architecture. Medals are offered by the American Institute of Architects, Alpha Rho Chi, and the Scarab Fraternity. Prizes have been established, respectively, by the Alpha Alpha Gamma Sorority, the Gargoyle Club, and the Northern States Power Company.

Loan funds.—Various loan funds are available from which worthy students may obtain financial assistance after they have been in attendance a sufficient length of time to establish satisfactory records of accomplishment. Application should be made to the dean of students and to the head of the student's department.

RESERVE OFFICERS TRAINING CORPS

Army

The War Department has established at this University units of medical, coast artillery (anti-aircraft), and signal corps, in which both basic and advanced courses are given. The coast artillery and signal corps units are made up almost entirely of students in the Institute of Technology for whom this technical and military training is particularly valuable. The Basic Course is open to all physically fit male students and carries one credit per quarter for six quarters; the Advanced Course is open to selected students who have completed the Basic Course.

Students in the institute who are admitted to the Advanced Course of the signal or coast artillery corps under the prescribed regulations receive for this work fifteen and eighteen elective credits toward graduation, respectively. They receive an allowance of cash and clothing from the government during the two years of the course, pay and transportation to attend one summer training camp and, if successful, a commission as a second lieutenant in the Officers' Reserve Corps of the United States Army after graduation.

Besides receiving technical instruction, the student in the Advanced Course has the opportunity to develop and exercise leadership and discipline which will be of value to him in his professional career. Special arrangements may be made in the student's program to enable him to take this course, the advantages of which are recognized.

Navy

The Naval Reserve Officers Training Corps of the University of Minnesota provides a four-year course for selected, physically qualified male students. A student who completes this course is eligible for a commission as ensign, United States Naval Reserve, or, as second lieutenant, United States Marine Corps Reserve, provided he applies for the commission, obtains a degree from the University, is recommended by the professor of naval science and tactics, and passes the prescribed physical examination. If the graduate is commissioned as ensign, U.S.N.R., he may, upon graduation, apply for one year of active duty at sea, upon completion of which he may be permitted to take an examination for a commission as an ensign in the regular line of the Navy, provided he is recommended by his commanding officer and is less than twenty-six years of age on June 30 of that year.

Cruises on board battleships, cruisers, and destroyers are held in the Atlantic and Pacific during the summer months of each year. As a prerequisite to a commission, a cruise is required of all students upon the completion of the third year of the course, but all N.R.O.T.C. students are eligible for a cruise each summer.

All prospective candidates for the N.R.O.T.C. *must* apply in person to the professor of naval science and tactics, University of Minnesota, before registering for the course, as enrolments are limited by law and a prescribed physical examination must be taken before the candidate can be considered.

CHANGES IN BULLETIN

The faculties of the Institute of Technology reserve the right to change their curricula and to cancel or change without notice any course printed in this bulletin. The bulletin is a statement of present conditions, and is subject to modification in any particular by faculty action.

SOCIETIES

Branches of the following national professional societies are maintained at the University of Minnesota by students and faculty members: American Chemical Society, American Institute of Chemical Engineers, American Institute of Electrical Engineers, American Institute of Mining and Metallurgical Engineers, American Society of Civil Engineers, American Society of Mechanical Engineers, American Society of Agricultural Engineers, and the Institute of the Aeronautical Sciences. In addition there are the Architectural Society, the School of Mines and Metallurgy Society, and the University of Minnesota Flying Club.

CURRICULA

COLLEGE OF ENGINEERING AND ARCHITECTURE

Aeronautical Engineering	Electrical Engineering
Agricultural Engineering	Engineering and Business Administration
Architecture	Engineering Prebusiness
Interior Architecture*	Mechanical Engineering
Civil Engineering	

SCHOOL OF CHEMISTRY

Chemistry	Physics
Chemical Engineering	

SCHOOL OF MINES AND METALLURGY

Mining Engineering	Geological Engineering
Metallurgical Engineering	Petroleum Engineering

STUDENTS ENTERING WITHOUT CHEMISTRY, HIGHER ALGEBRA, OR SOLID GEOMETRY AND THOSE REQUIRED TO TAKE THE COURSE IN PREPARATORY ENGLISH

Applicants deficient in either or both higher algebra and solid geometry will be admitted provisionally at the beginning of the school year. Students entering without high school chemistry will be required to carry a special course in college chemistry during their freshman year. Students entering with deficiencies in higher algebra or solid geometry or both and all students required to take the course in Preparatory English must register for such deficiencies in the fall quarter. In order to continue in the Institute of Technology these deficiencies must be removed during the fall quarter. Applicants deficient in either higher algebra or solid geometry will not be admitted at the beginning of the winter or spring quarter.

If students who enter with deficiencies in mathematics desire to graduate in four years, it will be necessary to attend the Summer Session immediately following their freshman year. It is recommended that such deficiencies be made up in the Summer Session before entering the institute.

Chemistry.—Students entering the engineering divisions of the College of Engineering and Architecture and the School of Mines and Metallurgy who have not had high school chemistry will take Inorganic Chemistry 14f-15w, four credits per quarter, instead of Inorganic Chemistry 4f-5w. Those entering the School of Chemistry who have not had high school chemistry will take Inorganic Chemistry 6f-7w-12s, five credits per quarter, instead of Inorganic Chemistry 9f-10w-12s.

Higher algebra.—Freshmen entering without higher algebra will take Course 9 (Higher Algebra) without credit, and all students except architects who have had higher algebra will register for Course 11 (College Algebra). For all students except architects, Course 9 will be followed by Courses 11, 12, and 13 during the winter and spring quarters and the following Summer Session, respectively. Architectural students take Courses 3 and 4 during the winter and spring quarters.

During Freshman Week all entering freshmen will be given a placement examination in algebra. Students who do not show satisfactory results in this examination will be advised to register in Higher Algebra, M.&M. 9.

* Discontinued. Not open to students entering after 1939-40.

Solid geometry.—Students who do not offer solid geometry for entrance will take Drawing 10 (Solid Geometry) during the fall quarter and without university credit. Students in the engineering courses in the College of Engineering and Architecture should follow this by Drawing 1, 2, and 3 in the winter and spring quarters and the Summer Session, respectively; in the School of Chemistry, by Drawing 7 and 8 in the winter and Summer Session; and in the School of Mines and Metallurgy, by Drawing 7, three credits, in the winter, and Drawing 9, three credits, in the spring quarter. Students in architecture will add solid geometry to their fall quarter program.

English.—Students who are required to take the course in Preparatory English will take this course during the fall quarter without university credit. The required courses in Composition, English 4-5-6, should follow in the winter and spring quarters and the Summer Session, respectively. Students register in Preparatory English in the Extension Division. Fee \$7.50.

AERONAUTICAL, AGRICULTURAL, CIVIL, ELECTRICAL, AND MECHANICAL ENGINEERING, AND PREBUSINESS

FRESHMAN YEAR§

(For students entering with chemistry, higher algebra, and solid geometry and who pass their English tests.)

		<i>Fall Quarter</i>			
Course No.	Title	Credits	Rec.	Lect.	Lab.
M.&M. 11	College Algebra	5	5	.....	.....
Inorg. Chem. 4	General Inorganic Chemistry.....	4	1	3	3
Engl. 4	Composition	3	3	.....	.....
Draw. 1	Engineering Drawing	3	.....	.....	8
M.E. 11*	Metal Working (for Prebusiness).....	2	.....	2	3
G.E. 11	Orientation	0	.....	1	.....

Winter Quarter

M.&M. 12	Trigonometry	5	5	.....	.....
Inorg. Chem. 5	General Inorganic Chemistry.....	4	1	3	3
Engl. 5	Composition	3	3	.....	.....
Draw. 2	Engineering Drawing	3	.....	.....	8
M.E. 9*	Foundry Practice (for Prebusiness).....	2	.....	2	3
G.E. 12	Orientation	0	.....	1	.....

Spring Quarter

M.&M. 13	Analytic Geometry	5	5	.....	.....
Inorg. Chem. 16	Semimicro Qualitative Analysis.....	5	.....	3	6
Engl. 6	Composition	3	3	.....	.....
Draw. 3	Descriptive Geometry	3	.....	.....	8
M.E. 4*	General Woodwork (for Prebusiness).....	2	.....	2	3
G.E. 13†	Orientation	0	.....	1	.....

AERONAUTICAL ENGINEERING

Four-year course leading to the degree of bachelor of aeronautical engineering, B.Aero.E.

In addition to the prescribed courses, sufficient electives must be taken to complete a total of at least 207 credits for graduation.

* Freshmen in Engineering Prebusiness are required to take Shop Practice, M.E. 4, 9, and 11, 2 credits per quarter; not required of the others.

† Women take one of the following courses in place of G.E. 13, Phys.Ed. 1f, 2w, 3s, 4f, 5w, or 6s.

§ See statement on page 15.

The course in Aeronautical Engineering is intended to provide instruction and training for students who wish to enter this field of engineering as a profession. With the rapid development of aviation in recent years, aeronautical engineering has assumed a prominent and important position among the engineering professions. The production of airplanes in the United States is increasing at a rapid rate. Attention is given to lighter-than-air craft. Extensive optional courses are available for those who wish to specialize in meteorology. Aeronautical engineers are required in all stages of the process, from the research work preliminary to improvements in design to the actual construction, testing, operation, and maintenance. Students trained in aerodynamics and the designing of light structures have been in demand in recent years in many industries.

The aeronautical engineering course is similar to other professional engineering courses. The first year of the course is the same as that of agricultural, civil, electrical, and mechanical engineering. The fundamental studies are the same. As a result, the graduates in aeronautical engineering should be prepared to enter various branches of the engineering field if, for any reason, they should prefer to do so.

As in other technical courses, so in aeronautical engineering, mathematics plays an important part. No student should enter this course who feels poorly prepared in mathematics.

It should be understood that this is a professional engineering course and not a training course for airplane pilots. It deals with the preparation of students for research, design, construction, operation, management, and maintenance of aircraft from the standpoint of the engineer or manager. However, practical flight training is important for aeronautical engineers, and students are urged to take advantage of their opportunities to obtain it through the University of Minnesota Flying Club, Army Air Corps, National Guard, Naval Reserve, Civil Aeronautics Authority's Flight Training Program, or private organizations.

Students taking the five-year combined course in Aeronautical Engineering and Business Administration may substitute business courses for Aero.E. 160, C.E. 17, Met. 152, and M.E. 151 or M.E. 154.

For freshman year, see page 16.

SOPHOMORE YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
M.&M. 24	Calculus I: Differential.....	5	5	.....	.....
Phys. 7	General Physics	5	1	4	2
Draw. 28†	Drafting	2	.....	.....	6
Aero.E. 3	Aeronautics	3	3	.....	.....
M.E. 5*	Pattern Practice	2	.....	2	3
or					
M.E. 13*	Forging, Welding, and Heat Treating.....	2	.....	2	3
or					
C.E. 17*	Surveying	3	.....	1	7
M.E. 70	Mechanical Technology	1	.....	2	.....

Winter Quarter

M.&M. 25	Calculus II: Integral.....	5	5	.....	.....
Phys. 8	General Physics	5	1	4	2
Aero.E. 2	Aircraft and Auto Engines.....	3	1	2	2
M.E. 5†	Pattern Practice	2	.....	2	3
or					
M.E. 13†	Forging, Welding, and Heat Treating.....	2	.....	2	3

* M.E. 5, 13 and C.E. 17 must be taken during sophomore year.

† For permissible substitute, see Institute of Technology, Description of Courses and Schedule of Classes, page 71.

Spring Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
M.&M. 26	Technical Mechanics: Statics	5	5	.....	.....
Phys. 9	General Physics	5	1	4	2
Aero.E. 1	Aeronautics	3	3	.....	.....
C.E. 17†	Surveying	3	.....	1	7
or					
M.E. 5†	Pattern Practice	2	.....	2	3
Draw. 29	Drafting	2	.....	.....	6

JUNIOR YEAR§

Fall Quarter

M.&M. 129	Hydraulics	4	3	1	.....
M.&M. 143	Hydraulics Laboratory	1	.....	.....	2
Aero.E. 100	Aerodynamics	3	3	.....	.....
Aero.E. 158	Physics of the Atmosphere	2	1	2	.....
M.E. 18**	Machine Shop Practice	2	.....	2	3
M.E. 32	Elementary Mechanical Laboratory	2	.....	.....	4
M.E. 131	Thermodynamics	3	3	.....	2
	Electives*				

Winter Quarter

M.&M. 128	Strength of Materials	5	5	.....	.....
M.&M. 141	Materials Testing Laboratory	2	.....	1	2
Aero.E. 101	Aerodynamics	3	3	.....	.....
M.E. 26	Mechanism and Kinematics	3	3	.....	.....
M.E. 132	Thermodynamics	3	3	.....	.....
	Electives*				

Spring Quarter

M.&M. 127	Technical Mechanics: Dynamics	5	5	.....	.....
Aero.E. 83	Stresses in Simple Structures	3	3	.....	.....
Aero.E. 102	Aerodynamics	3	3	.....	.....
Aero.E. 140	Aeronautical Laboratory	2	.....	.....	6
Aero.E. 170	Air Transport	2	2	.....	.....
M.E. 27	Machine Design	3	.....	2	3

SENIOR YEAR§

Fall Quarter

E.E. 46	Electric Power	3	3	.....	.....
M.E. 150	Internal Combustion Engines	3	3	.....	.....
Met. 152	Metallography	3	.....	2	2
Aero.E. 115¶	Airplane Stresses	3	2	.....	2
or					
M.&M. 180w	Advanced Strength of Materials	3	3	.....	.....
Aero.E. 120	Airplane Design	3	2	.....	3

* For list of elective courses in other colleges, see page 68.

† M.E. 5, 13, and C.E. 17 must be taken during sophomore year.

§ Students who contemplate an extra quarter in residence should arrange their programs for this time from such courses as Aero.E. 159, 160, 164, 165, 170, 173, 174, 175, 190, 191, 193, 194, 195, in order to have the proper sequence of courses.

¶ Students may substitute M.&M. 180w, Advanced Strength of Materials, 3 cred., for Aero.E. 115f.

** M.E. 18 may be taken in either the fall or winter quarter.

Winter Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
E.E. 47	Electric Power	3	2	.....	2
M.E. 151†	Advanced Internal Combustion Engines.....	3	3	.....	.....
M.E. 154†	Design of Airplane Engines.....	2	.....	.....	6
Aero.E. 121	Airplane Design	4	2	.....	6
Aero.E. 141	Aerodynamics Laboratory	3	1	.....	6
Aero.E. 190	Seminar	1	1	.....	.....
	Electives*				

Spring Quarter

M.E. 158	Aero Engine Testing.....	2	.....	.....	6
Aero.E. 122	Airplane Design	3	1	.....	6
Aero.E. 155	Aeronautical Calculation	2	2	.....	.....
Aero.E. 159	Inspection Trip (spring vacation).....	1	.....	.....	.....
Aero.E. 160†	Airships	3	2	.....	3
Aero.E. 191	Seminar	1	1	.....	.....
	Electives*				

AGRICULTURAL ENGINEERING

Four-year course leading to the degree of bachelor of agricultural engineering, B.Ag.E., in co-operation with the College of Agriculture, Forestry, and Home Economics.

Requirements for graduation include all prescribed courses with sufficient approved electives to make a total of at least 207 credits. This is an average of 17¼ credits per quarter for 12 quarters.

Agricultural engineering activities are usually grouped under the heads of *farm power and machinery*, *farm structures*, and *soil moisture relations*. There is also need for service in the entire field necessitating general preparation in all three lines.

The farm machinery field covers the selection and management of machinery and equipment best suited to produce good results locally on any given type of farm, the design and construction of such machinery or equipment where it does not yet exist, the improvement of such design to meet special needs, and the adaptation of available types of power to local farm conditions. The farm structures field covers arrangement of the structures on the farmstead for economy, convenience, and comfort; the design and construction of farm buildings and related structures; and the adaptation of available types of structural materials to local farm conditions. The soil moisture relations field covers development of virgin lands suited to agriculture and the improvement of lands already under cultivation through soil conditioning by means of effective design and proper installation of drainage, and irrigation works and control of soil erosion.

The field, as yet comparatively new and uncrowded, offers many opportunities among which the following are prominent: with manufacturers of farm machinery, equipment, and building materials; as executives, research engineers, publicity and sales managers, and technical field experts; as managers of large farms requiring extensive machinery or equipment; as engineers with the local, state, and federal government, and with development companies; as agricultural advisers with power companies in development of rural service; as agricultural engineering editors for farm papers and trade journals; as rural architects and builders; as teachers, investigators, and extension specialists in state

* For list of elective courses in other colleges, see page 68.

† Any one or two of the following courses: Aero.E. 160, Airships, and M.E. 151, Advanced Internal Combustion Engines, or M.E. 154, Design of Airplane Engines, but not *both* of these M.E. courses, may be replaced by an equal number of approved elective credits in any of the following fields: aerodynamics, airplane design and stresses, internal combustion engines, and air transport and meteorology; also in business for students taking the five-year combined course with business administration.

agricultural colleges, experiment stations, and in the United States Department of Agriculture; as consulting agricultural engineers in general practice.

Students taking the combined five-year course in agricultural engineering and business administration may fill all junior and senior elective opportunities in the junior and senior years with required business courses under the direction of the agricultural engineering adviser and with the approval of the School of Business Administration.

For freshman year, see page 16.

SOPHOMORE YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
M.&M. 24	Calculus I: Differential.....	5	5	.....	.....
Phys. 7	General Physics.....	5	1	4	2
Ag.E. 5	Farm Structures Laboratory.....	3	.....	2	4
Ag.E. 43	Mechanical Laboratory.....	3	.....	1	5
Econ. 8	General Economics.....	3	3	.....	.....

Winter Quarter

M.&M. 25	Calculus II: Integral.....	5	5	.....	.....
Phys. 8	General Physics.....	5	1	4	2
Soils 9	Soils.....	4	4	.....	.....
Econ. 9	General Economics.....	3	3	.....	.....

Spring Quarter

M.&M. 26	Technical Mechanics: Statics.....	5	5	.....	.....
Phys. 9	General Physics.....	5	1	4	2
Ag.E. 21	Elements of Surveying.....	5	.....	1	12
Ag.E. 18	Agricultural Automotives.....	4	.....	2	6

JUNIOR YEAR

Fall Quarter

M.&M. 127	Technical Mechanics: Dynamics.....	5	5	.....	.....
M.&M. 129	Hydraulics.....	4	3	1	.....
M.&M. 143	Hydraulics Laboratory.....	1	.....	.....	2
Ag.E. 52	Elements of Farm Machinery.....	3	1	1	3
Geol. 5	Engineering Geology.....	3	.....	3	.....
M.E. 131	Thermodynamics.....	3	3	.....	2

Winter Quarter

M.&M. 128	Strength of Materials.....	5	5	.....	.....
Ag.Econ. 102	Farm Management: Organization.....	3	.....	3	.....
Ag.E. 51† or	Soil Moisture Relations.....	5	1	4	.....
Soils 108	Physical Properties of Soils.....	3	.....	1	6
M.E. 26	Mechanism and Kinematics.....	3	3	.....	.....
Rhet. 22	Public Speaking.....	3	3	.....	.....

Spring Quarter

Agron. 1	General Farm Crops.....	3	3	.....	.....
Ag.E. 37	Rural Sanitation.....	3	.....	3	.....
Ag.E. 53	Farm Structures.....	3	1	1	4
Ag.E. 72† or	Applied Electricity.....	3	.....	2	4
Ag.E. 73*	Steam Boilers and Heat Engines.....	3	1	1	4
M.E. 27	Machine Design.....	3	.....	2	3

* Given only in alternate years, 1942-43, 1944-45, etc.

† Given only in alternate years, 1943-44, 1945-46, etc.

SENIOR YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Ag.E. 67	Advanced Farm Structures Design	3	1	1	4
Ag.E. 71	Design and Economics of Agricultural Machinery	3	.....	1	4
C.E. 37	Structural Engineering	3	.....	1	3
Dy.Husb. 1	Elements of Dairying	3	.....	3	.....
	Electives to complete program.				

Winter Quarter

Ag.E. 51† or	Soil Moisture Relations	5	1	4	.....
Soils 108	Physical Properties of Soils	3	.....	1	6
G.E. 101	Contracts and Specifications	3	.....	3	.....
An.Husb. 1	Livestock Production	3	.....	3	3
	Electives to complete program.				

Spring Quarter

Ag.E. 72† or	Applied Electricity	3	.....	2	4
Ag.E. 73*	Steam Boilers and Heat Engines	3	1	1	4
C.E. 146	Plain Concrete	3	.....	2	4
	Electives to complete program.				

RECOMMENDED ELECTIVES‡

The following courses are suggested for the guidance of students who wish to elect work along the general lines indicated.

Farm Structures

Course No.	Title	Credits
Ag.E. 44s	Advanced Drawing	2
Ag.E. 111f,112w,113s	Farm Building Problems, per quarter.....	2-6
Arch. 57f,58w,59s	Building Materials and Methods, per quarter.....	2
For. 10w	Farm Forestry	3
Hort. 24w	Principles of Landscape Design.....	3

Farm Power and Machinery

M.E. 18f,w	Machine Shop Practice	2
M.E. 121f	Machine Design	2
M.E. 132w	Thermodynamics	3
M.E. 150f,w	Internal Combustion Engines.....	3
Met. 156w	Metallography	3
Ag.E. 121f,122w,123s	Farm Power and Machinery Problems, per quarter.....	2-6
Ag.E. 126w	Selection of Farm Equipment.....	3
E.E. 43f,44w,45s	Electric Power, per quarter.....	3

Land Reclamation and Development

Ag.Econ. 191w	Advanced Agricultural Statistics.....	3
Ag.E. 101f,102w,103s	Advanced Drainage Problems, per quarter.....	2-6
C.E. 161f	Power	4
M.&M. 130f	Open Channel Flow.....	3
M.&M.190w	Mechanics of Similitude and Dimensional Analysis.....	3

General

Ag.Econ. 103s	Farm Operation	3
Bot. 1f,w,s	General Botany	3
Hort. 6f	Fruit Growing	3

* Given only in alternate years, 1942-43, 1944-45, etc.

† Given only in alternate years, 1943-44, 1945-46, etc.

‡ Students taking the combined five-year course in agricultural engineering and business administration see statement on page 20.

ARCHITECTURE

The work in architecture offered by the Institute of Technology includes courses dealing with the history, theory, and practice of architecture and the allied arts of design. It is organized into general and professional courses as follows:

GENERAL COURSES

Four-year course leading to the degree of bachelor of arts (B.A.) with a major in architecture, in the College of Science, Literature, and the Arts.

Four-year course leading to the degree of bachelor of arts (B.A.) with a major in fine arts, in the College of Science, Literature, and the Arts.

The general courses are intended for students who want to combine with their academic training, whether for cultural or vocational reasons, some study of architecture, drawing, painting, or sculpture. The major in architecture offers an advantageous approach to the five- and six-year professional courses in architecture described below, or to further training in the special fields of community and regional planning, landscape architecture, or decorative, industrial, and interior design. For further information see the Bulletin of the College of Science, Literature, and the Arts and the Combined Class Schedule.

PROFESSIONAL COURSES

Five-year course leading to the degree of bachelor of architecture (B.Arch.) in the Institute of Technology.

Six-year course leading to the degree of bachelor of arts (B.A.) with a major in architecture, in the College of Science, Literature, and the Arts and the degree of bachelor of architecture (B.Arch.) in the Institute of Technology.

The professional courses are intended primarily for students who expect to enter the professional practice of architecture in any of its many recognized phases. It is assumed that the students taking them have a definite interest in architecture and a natural aptitude for the actual processes of designing buildings. They provide training which, when supplemented by practical experience in architects' offices, places the student in line for recognition as a practicing architect according to the registration laws of the various states. They also serve as advantageous approaches to various fields in government and industry where architectural skill and knowledge are valuable. For further information see page 23 for the five-year course, page 25 for the six-year course.

The work in architecture included in these courses falls into three general divisions. One is theory, presenting the science, philosophy, and history which form the background of architectural design. The second is practice drawing and modeling as a means of expression in architectural design. The third and principal division is continued practice in all phases of architectural design itself, including both composition and construction.

As high school preparation for either the five-year or six-year course, higher algebra and solid geometry are essential; physics, chemistry, history, and foreign language are strongly recommended; instrumental and freehand drawing are advantageous.

Whether the student elects the five-year or the six-year course will depend on the time and means at his disposal. He will find it highly desirable to supplement and broaden his technical training by as much general academic work of college grade as he finds possible. College work taken at institutions other than Minnesota can be readily adjusted to either professional course. In any such work college algebra, trigonometry, and analytic geometry must be included as essential prerequisites to certain courses in structural design. Selections from language, history, economics, political science, sociology, physics, and chemistry are recommended. Prospective students should note that it takes normally four

years to complete the required work in architectural design, regardless of how much other work they may have to their credit, and should calculate their time accordingly.

Five-Year Course

In addition to the prescribed courses, sufficient approved electives must be taken to complete a total of at least 225 credits.

This course is intended to provide a balanced basic training in all phases of architectural theory and practice. In addition, a certain amount of specialization is possible in such phases as community planning, interior design, or construction and building equipment (sometimes called "architectural engineering"). This specialization is accomplished by (1) a choice of electives and (2) a choice of problems in architectural design.

The following program is that normally followed by students entering from high school. It will naturally be modified and condensed for students with previous college experience. It may also be modified by the student's progress in design and drawing since that is based on achievement, rather than time. The work of the first year is identical with the first year of the major in architecture in the College of Science, Literature, and the Arts and students may transfer from one course to the other at the end of that time without loss of credit toward either degree.

The choice and distribution of elective subjects should be arranged in advance by consultation with advisers in the School of Architecture.

FIRST YEAR*

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Engl. 4	Composition	3	3	.....	.....
Arch. DP-I	Drawing and Painting, Grade I.....	2	.....	.....	4
	Electives†				

Winter Quarter

M.&M. 3	Freshman Mathematics for Architects.....	5	5	.....	.....
Engl. 5	Composition	3	3	.....	.....
Arch. DP-I	Drawing and Painting, Grade I.....	2	.....	.....	4
	Electives†				

Spring Quarter

M.&M. 4	Freshman Mathematics for Architects.....	5	5	.....	.....
Engl. 6	Composition	3	3	.....	.....
Arch. DP-I	Drawing and Painting, Grade I.....	2	.....	.....	4
	Electives†				

SECOND YEAR

Fall Quarter

M.&M. 91	Calculus for Architects.....	4	4	.....	.....
Arch. 4	Graphic Representation	2	.....	1	3
Arch. DP-II	Drawing and Painting, Grade II.....	2	.....	.....	4
Arch. AD-I	Architectural Design, Grade I.....	5	.....	.....	15
	Electives†				

Winter Quarter

M.&M. 92	Mechanics for Architects.....	4	4	.....	.....
Arch. 5	Graphic Representation	2	.....	1	3
Arch. DP-II	Drawing and Painting, Grade II.....	2	.....	.....	4
Arch. AD-I	Architectural Design, Grade I.....	5	.....	.....	15
	Electives†				

* See statement on page 15 for students entering without chemistry, higher algebra, or solid geometry and those required to take the course in Preparatory English.

† For list of recommended electives, see page 25.

Course No.	Title	Credits	Rec.	Lect.	Lab.
<i>Spring Quarter</i>					
M.&M. 93	Strength of Materials for Architects.....	4	4	.....	.....
Arch. 6	Graphic Representation	2	.....	1	3
Arch. DP-II	Drawing and Painting, Grade II.....	2	.....	.....	4
Arch. AD-I	Architectural Design, Grade I.....	5	.....	.....	15
	Electives†				
THIRD YEAR					
<i>Fall Quarter</i>					
Arch. 51	History of Architecture.....	3	.....	3	.....
Arch. 57	Building Materials and Methods.....	2	.....	2	.....
Arch. DP-III	Drawing and Painting, Grade III.....	2	.....	.....	4
Arch. AD-II	Architectural Design, Grade II.....	6	.....	.....	18
C.E. 38	Structural Design	3	.....	3	.....
<i>Winter Quarter</i>					
Arch. 52	History of Architecture.....	3	.....	3	.....
Arch. 58	Building Materials and Methods.....	2	.....	2	.....
Arch. DP-III	Drawing and Painting, Grade III.....	2	.....	.....	4
Arch. AD-II	Architectural Design, Grade II.....	6	.....	.....	18
C.E. 39	Structural Design	3	.....	3	.....
<i>Spring Quarter</i>					
Arch. 53	History of Architecture.....	3	.....	3	.....
Arch. 59	Building Materials and Methods.....	2	.....	2	.....
Arch. DP-III	Drawing and Painting, Grade III.....	2	.....	.....	4
Arch. AD-II	Architectural Design, Grade II.....	6	.....	.....	18
C.E. 41	Structural Design	3	.....	3	.....
FOURTH YEAR					
<i>Fall Quarter</i>					
Arch. 101	Building Materials and Methods.....	2	.....	2	.....
Arch. AD-III	Architectural Design, Grade III.....	9	.....	.....	27
E.E. 40	Electrical Wiring and Equipment.....	2	.....	2	.....
	Electives†				
<i>Winter Quarter</i>					
Arch. 102	Building Materials and Methods.....	2	.....	2	.....
Arch. AD-III	Architectural Design, Grade III.....	9	.....	.....	27
C.E. 171	Building Sanitation	2	.....	2	.....
	Electives†				
<i>Spring Quarter</i>					
Arch. 103	Building Materials and Methods.....	2	.....	2	.....
Arch. AD-III	Architectural Design, Grade III.....	9	.....	.....	27
M.E. 164	Heating and Ventilation	2	.....	2	.....
	Electives†				
FIFTH YEAR					
<i>Fall Quarter</i>					
Arch. AD-III	Architectural Design, Grade III.....	9	.....	.....	27
	Electives†				
<i>Winter Quarter</i>					
Arch. AD-III	Architectural Design, Grade III.....	9	.....	.....	27
Arch. 105	Professional Practice	2	.....	2	.....
	Electives†				
<i>Spring Quarter</i>					
Arch. AD-IV	Architectural Thesis	12	.....	.....	36
	Electives†				

† For list of recommended electives, see page 25.

ELECTIVE COURSES

The following courses are recommended as electives. They should be chosen and distributed so as to keep the normal schedule as nearly as possible to 15 credits per quarter. Four- and five-credit courses should be taken in the first year and three-credit courses in the second year.

First Year

Course No.	Title	Credits
Arch. 1f-2w-3s	Introduction to Architecture (should be taken by all students entering without previous college or professional experience) per quarter.....	2

First and Second Years

Chem. 1f-2w	General Inorganic Chemistry, per quarter.....	4
Econ. 1f,w,s	Introduction to Economics	5
Econ. 3f,w,s	Elements of Money and Banking	5
Econ. 8f,w-9w,s	General Economics, per quarter.....	3
Engl. 7w-8s	Explorations in Literature, per quarter.....	3
Engl. 37f,w,s	Technical Discussions	3
F.A. 1f,2w,3s	Introduction to Art, per quarter.....	3
Fr. 1f,w,s-2f,w,s-3f,w,s	Beginning and Intermediate French, per quarter.....	5
Geog. 11f,w,s	Human Geography	5
Geol. 8f,w,s	Introduction to Geology.....	5
Germ. 1f,w,s-2f,w,s-3f,w,s-4f,w,s	Beginning and Intermediate German, per quarter.....	5
Hist. 1f,w-2w,s-3f,s	European Civilization, per quarter.....	4
Hist. 11f-12w-13s	Medieval History, per quarter.....	3
Orient. 1f-2w-3s	Man in Nature and Society, per quarter.....	3
Phys. 1f-2w-3s	Introduction to Physical Science, per quarter.....	3
Pol.Sci. 1f,w-2w,s-3s	American Government and Politics, per quarter.....	3
Psy. 1f,s-2w,s	General Psychology, per quarter.....	3
Soc. 1f,w,s	Introduction to Sociology.....	5
Span. 1f,w,s-2f,w,s-3f,w,s-4f,w,s	Beginning and Intermediate Spanish, per quarter.....	5

Third to Fifth Years

Arch. 61f-62w-63s	Tutorial Work in History of Architecture, per quarter.....	2
Arch. 67f-68w-69s	Theory of Design, per quarter.....	2
Arch. 104f	Housing	3
Arch. 106s	Housing	2
Arch. 110f	Architectural Acoustics	2
Arch. ID-If,w,s	Interior Design	24
Arch. M-If,w,s	Modeling, Grade I.....	6
Arch. M-Iaf,w,s	Modeling for Architects.....	2
Arch. M-IIf,w,s	Modeling, Grade II.....	6

For other courses, and for details of the courses listed above, see the Institute of Technology Description of Courses and Schedule of Classes and the Combined Class Schedule.

Six-Year Course in Arts and Architecture

During the first four years of this course the student is registered in the College of Science, Literature, and the Arts and follows the plan of study prescribed for a bachelor of arts degree with a major in architecture.

The following courses should be completed during this period:

Required for the major sequence:

Course No.	Title	Credits
Arch. 4-5-6	Graphic Representation	6
Arch. 51-52-53	History of Architecture.....	9
Arch. 57-58-59	Building Materials and Methods.....	6
Arch. DP-I	Drawing and Painting, Grade I.....	6
Arch. DP-II	Drawing and Painting, Grade II.....	6
Arch. AD-I	Architectural Design, Grade I.....	15
Arch. AD-II	Architectural Design, Grade II.....	18

Additional requirements:

Math. 7-6-30	College Algebra, Trigonometry, Analytic Geometry.....	15
M.&M. 91-92-93	Calculus, Mechanics, Strength of Materials.....	12
C.E. 38-39-41	Structural Design.....	9

Total 105

During the last two years of the course, or upon completion of the requirements for the bachelor of arts degree, the student is registered in the School of Architecture of the Institute of Technology to complete the requirements for a bachelor of architecture degree as prescribed for the five-year course on page 23.

See also the Junior and Senior College requirements as given in the Bulletin of the College of Science, Literature, and the Arts; and Architecture, in the Combined Class Schedule.

INTERIOR ARCHITECTURE*

Four-year course leading to the degree of bachelor of interior architecture, B.Int.Arch.

This course requires normally four years for its completion, the first two years in the College of Science, Literature, and the Arts, and the last two years in the Institute of Technology, including 180 credits.

For the freshman and sophomore years, students register in the College of Science, Literature, and the Arts and complete the requirements of the Junior College for the major in architecture, including the following courses:

Course No.	Title	Credits
Arch. 4-5-6	Graphic Representation	6
Arch. DP-I	Drawing and Painting, Grade I.....	6
Arch DP-II	Drawing and Painting, Grade II.....	6
Arch. AD-I	Architectural Design, Grade I.....	15

Having satisfied the requirements of the Junior College, students transfer to the Institute of Technology and pursue the following curriculum, amounting to 90 credits for the remaining two years:

JUNIOR YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Arch. 51	History of Architecture.....	3	.....	3	.....
Arch. 57	Building Materials and Methods.....	2	.....	2	.....
Arch. 67	Theory of Design.....	2	.....	2	.....
Arch. AD-II	Architectural Design, Grade II.....	6	.....	.....	18
	Electives				

Winter Quarter

Arch. 52	History of Architecture.....	3	.....	3	.....
Arch. 58	Building Materials and Methods.....	2	.....	2	.....
Arch. 68	Theory of Design.....	2	.....	2	.....
Arch. AD-II	Architectural Design, Grade II.....	6	.....	.....	18
M.E. 3	Wood-Finishing	2	.....	.....	6
	Electives				

* Discontinued. No students accepted after 1939-40.

Spring Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Arch. 53	History of Architecture.....	3	.....	3	.....
Arch. 59	Building Materials and Methods.....	2	.....	2	.....
Arch. 69	Theory of Design.....	2	.....	2	.....
Arch. AD-II	Architectural Design, Grade II.....	6	.....	.....	18
	Electives				

SENIOR YEAR

Fall Quarter

Arch. DP-III	Drawing and Painting, Grade III.....	2	.....	.....	4
Arch. ID-I	Interior Design.....	8	.....	.....	24
	Electives				

Winter Quarter

Arch. DP-III	Drawing and Painting, Grade III.....	2	.....	.....	4
Arch. ID-I	Interior Design.....	8	.....	.....	24
	Electives				

Spring Quarter

Arch. DP-III	Drawing and Painting, Grade III.....	2	.....	.....	4
Arch. ID-I	Interior Design.....	8	.....	.....	24
	Electives				

CHEMISTRY AND CHEMICAL ENGINEERING

FRESHMAN AND SOPHOMORE YEARS*

FRESHMAN YEAR

Fall Quarter

M.&M. 11	College Algebra.....	5	5	.....	.....
Inorg.Chem. 9	General Inorganic Chemistry.....	5	1	3	5
Engl. 4	Composition.....	3	3	.....	.....
Draw. 7	Drawing and Descriptive Geometry.....	3	.....	.....	8
or					
M.E. 15**	Survey of Manufacturing Processes.....	3	1	2	.....

Winter Quarter

M.&M. 12	Trigonometry.....	5	5	.....	.....
Inorg.Chem. 10	General Inorganic Chemistry.....	5	1	3	5
Engl. 5	Composition.....	3	3	.....	.....
Draw. 7	Drawing and Descriptive Geometry.....	3	.....	.....	8
or					
M.E. 15**	Survey of Manufacturing Processes.....	3	1	2	.....

Spring Quarter

M.&M. 13	Analytic Geometry.....	5	5	.....	.....
Inorg.Chem. 12	Semimicro Qualitative Analysis.....	5	2	1	6
Engl. 6	Composition.....	3	3	.....	.....
Draw. 8	Drawing and Descriptive Geometry.....	3	.....	.....	8
or					
M.E. 15**	Survey of Manufacturing Processes.....	3	1	2	.....
G.E. 13†	Orientation.....	0	.....	1	.....

* See statement on page 15 for students entering without chemistry, higher algebra, or solid geometry and those required to take the course in Preparatory English.

† Students with more than one year advanced standing are exempted from G.E. 13. Women take one of the following courses in place of G.E. 13, Phys.Ed. 1f, 2w, 3s, 4f, 5w, or 6s.

** Advanced standing students are permitted to substitute for M.E. 15 any other shop course or laboratory arts given in the Physics Department.

SOPHOMORE YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
M.&M. 24	Calculus I: Differential.....	5	5	.....	.....
Inorg.Chem. 13	Semimicro Qualitative Analysis.....	5	1	2	8
Phys. 7	General Physics.....	5	1	4	2
German 24§	Chemical German.....	3	3	.....	.....

Winter Quarter

M.&M. 25	Calculus II: Integral.....	5	5	.....	.....
Anal.Chem. 1	Quantitative Analysis.....	5	1	1	10
Phys. 8	General Physics.....	5	1	4	2
German 25§	Chemical German.....	3	3	.....	.....

Spring Quarter

M.&M. 84	Technical Mechanics.....	5	5	.....	.....
Anal.Chem. 2	Quantitative Analysis.....	5	1	1	10
Phys. 9	General Physics.....	5	1	4	2
German 26§	Chemical German.....	3	3	.....	.....
Chem.E. 80¶	Chemical Engineering Materials.....	1	.....	2	.....

CHEMISTRY

Four-year course leading to the degree of bachelor of chemistry, B.Chem.

In addition to the prescribed courses, sufficient approved electives must be taken to complete a total of at least 207 credits.

This professional course in Chemistry is designed to provide thoro training in the fundamentals of chemistry and related subjects. It serves as a basis for further specialization and a foundation for graduate work. Its graduates secure positions in practical chemistry, research, and teaching, in chemical industries, the government service, in colleges and laboratories, etc.

For freshman and sophomore years, see pages 27 and 28.

JUNIOR YEAR

Fall Quarter

Org.Chem. 51	Elementary Organic Chemistry.....	5	.....	5	6
Phys.Chem. 101	Physical Chemistry.....	3	1	3	.....
Phys.Chem. 104	Physical Chemistry Laboratory.....	2	1	.....	5
	Electives*				

Winter Quarter

Org.Chem. 52	Elementary Organic Chemistry.....	5	.....	5	6
Phys.Chem. 102	Physical Chemistry.....	3	1	3	.....
Phys.Chem. 105	Physical Chemistry Laboratory.....	2	1	.....	5
	Electives*				

Spring Quarter

Org.Chem. 153	Elementary Organic Chemistry.....	5	.....	5	6
Phys.Chem. 103	Physical Chemistry.....	3	1	3	.....
Phys.Chem. 106	Physical Chemistry Laboratory.....	2	1	.....	5
Chem.E. 131	Industrial Inorganic Chemistry.....	4	1	4	.....
	Electives*				

* For list of elective courses in other colleges, see page 68.

§ Students who have had two years of high school German or one year of college German take Course 27-28-29.

¶ Required of chemical engineers only.

SENIOR YEAR†

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Inorg.Chem. 103	Advanced Inorganic Chemistry.....	3	.....	3	.....
Anal.Chem. 131	Applications of Indicators.....	3	.....	2	5
Phys.Chem. 161§	Nuclear Chemistry and Radioactivity.....	3	.....	3	.....
Chem.E. 132	Industrial Organic Chemistry.....	4	.....	5	.....
German 41	Chemical German	2	2	.....	.....
	Electives*				

Winter Quarter

Inorg.Chem. 104	Advanced Inorganic Chemistry.....	3	.....	3	.....
Anal.Chem. 132†	Electrometric Measurements and Titrations.....	3	.....	2	5
Phys.Chem. 162§	Nuclear Chemistry and Radioactivity.....	3	.....	3	.....
German 42	Chemical German	2	2	.....	.....
	Electives*				

Spring Quarter

Inorg.Chem. 105	Advanced Inorganic Chemistry.....	3	.....	3	.....
German 43	Chemical German	2	2	.....	.....
	Electives*				

NOTE.—Near the close of the junior year, each student will choose a major adviser from the list below. In consultation with the adviser he will plan a program of work for the entire senior year, based normally upon concentration of electives around a chosen field of chemistry.

LIST OF ADVISERS FOR SENIORS

Inorganic Chemistry: Professors Sneed, Barber, Cohen, Heisig, Klug, Maynard, Pervier.

Analytical Chemistry: Professors Kolthoff, Geiger, Sandell.

Organic Chemistry: Professors Smith, Lauer, Koelsch.

Physical Chemistry: Professors Lind, MacDougall, Reyerson, Livingston, Hull.

Chemical Engineering: Professors Mann, Montillon, Montonna, Stoppel, Pike.

SPECIALIZATION IN BACTERIOLOGY, BIOCHEMISTRY, AND GEOLOGY

For the benefit of students in chemistry who may desire to specialize in related fields, minor groups of electives have been arranged in bacteriology, biochemistry, and geology which may be taken in the junior and senior years in addition to the required courses of the regular chemistry curriculum shown above. The completion of one of these groups will qualify the chemistry graduate to enter upon graduate work towards the Ph.D. degree in that department, thus providing an exceptionally strong foundation in chemistry for specialization in the chosen field.

MINOR IN BACTERIOLOGY

JUNIOR YEAR

Four credits of botany or zoology are prerequisite to Bacteriology 53. Botany 1f, 4 credits, or Zoology 14f-15w, 6 credits, should be taken in the junior year to satisfy this requirement. By special arrangement it may be possible to take Bacteriology 53, 5 credits, in the winter or spring quarter of the junior year, if desired.

* For list of elective courses in other colleges, see page 68.

† For permissible substitute, see Institute of Technology, Description of Courses and Schedule of Classes, page 71.

§ In place of Phys. Chem. 161-162, student may substitute six credits in physical chemistry courses to which Phys. Chem. 103 is a prerequisite.

¶ Students who are planning on taking graduate work are urged to take French as one of the electives in the senior year.

INSTITUTE OF TECHNOLOGY

SENIOR YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Bact. 53	General Bacteriology	5	.....	3	6
Bact. 121	Physiology of Bacteria	3	.....	3	.....

Winter Quarter

Bact. 122	Physiology of Bacteria	3	3
-----------	------------------------------	---	-------	---	-------

Spring Quarter

Bact. 123	Applied Bacteriology	3	3
-----------	----------------------------	---	-------	---	-------

MINOR IN BIOCHEMISTRY

JUNIOR YEAR

Fall Quarter

Zool. 14†	General Zoology	3	2	4
-----------	-----------------------	---	-------	---	---

Winter Quarter

Zool. 15†	General Zoology	3	2	4
-----------	-----------------------	---	-------	---	---

SENIOR YEAR

Fall Quarter

Ag.Biochem. 113	Biochemical Laboratory Methods	2	.....	.....	6
Ag.Biochem. 119	Colloids	3	.....	3	.....
Bact. 53	General Bacteriology	5	.....	3	6

Winter Quarter

Ag.Biochem. 114	Biochemical Laboratory Methods	2	6
-----------------	--------------------------------------	---	-------	-------	---

Spring Quarter

Ag.Biochem. 115	Biochemical Laboratory Methods	2	.....	.....	6
Ag.Biochem. 123	Enzymes	3	.....	3	.....

MINOR IN GEOLOGY

JUNIOR YEAR

Fall Quarter

Min. 23	Elements of Mineralogy	4	1	2	4
---------	------------------------------	---	---	---	---

Winter Quarter

Min. 24	Elements of Mineralogy	4	1	2	4
---------	------------------------------	---	---	---	---

SENIOR YEAR

Fall Quarter

Geol. 1	General Geology	3	.....	3	.....
Geol. A	General Geology Laboratory	2	.....	.....	4
Geol. 121	Crystallography	3	.....	3	2

Spring Quarter

Geol. 3	General Geology (Dynamic and Economic)	3	.....	3	.....
Geol. C	General Geology Laboratory	2	.....	.....	4

† Nine credits in Botany may be substituted for Zoology 14-15.

CHEMICAL ENGINEERING

Four-year course leading to the degree of bachelor of chemical engineering, B.Ch.E. In addition to the prescribed courses, sufficient approved electives must be taken to complete a total of 218 credits.‡

Chemical engineering deals with the unit operations, such as crushing, grinding, sifting, mixing, fluid flow and heat flow, filtration, evaporation, drying, distillation, extraction, absorption, and crystallization, organic processes that are so vital in making any industry based on a chemical transformation of matter a commercial success. The chemist uses these operations in the laboratory, but in order to apply them to large-scale industrial processes he must have a thoro understanding of the fundamental physiochemical, chemical, and engineering principles on which they are based. The study of such principles constitutes that branch of engineering known as chemical engineering. For this purpose the chemical engineer must be thoroly trained in the various branches of chemistry, physics, and mathematics and have a good training in the fundamentals of mechanical, electrical, and chemical engineering so that he can design, construct, and successfully operate a plant using these unit operations.

The chemical engineer is primarily a producer. It is his province to develop a process from the laboratory stage through semi-works equipment to the production stage which uses engineering materials for the manufacture of unit process equipment in accordance with fundamental chemical engineering principles.

As many industries are based on some chemical operation, the chemical engineer is much in demand. He may be engaged in the manufacture of inorganic products—the mineral acids, alkalis, ammonia, paint pigments, fertilizers; in the organic industries—dyes, explosives, lacquers, solvents, medicinals; in the manufacture of gases—coal gas, carbureted blue gas, hydrogen, acetylene, helium; in the electrochemical industries such as the manufacture of graphite, calcium carbide, carborundum and other abrasives, wet and dry batteries, electroplating; in the metallurgical industries; and even in the food industries such as the manufacture of sugar, flour, salt, and starch. There are many others such as leather, paper, textiles, soaps, petroleum, glass, and cement.

In these industries the chemical engineer does investigational work, development work, design of equipment, and plant operation. Some enter the field of sales engineering and technical writing.

Students taking the five-year combined course in chemical engineering and business administration may substitute business courses for M.&M. 86.

For freshman and sophomore years, see pages 27 and 28.

JUNIOR YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Chem.E. 101	Unit Operations	3	2	2	.....
Chem.E. 105	Fuels and Combustion.....	4	2	2	4
Org.Chem. 51	Elementary Organic Chemistry.....	5	.....	5	6
M.&M. 86†	Hydraulics with Laboratory.....	3	2	.....	2
Phys.Chem. 101	Physical Chemistry	3	1	3	.....

Winter Quarter

Chem.E. 102	Unit Operations	6	4	2	4
Org.Chem. 52	Elementary Organic Chemistry.....	5	.....	5	6
Phys.Chem. 102	Physical Chemistry	3	1	3	.....
M.E. 38	Heat Engines	3	1	2	.....
M.E. 39‡	Heat Engines Laboratory.....	1	.....	.....	3

† For permissible substitute, see Institute of Technology, Description of Courses and Schedule of Classes, page 71.

‡ Students who are planning to take graduate work are urged to take French as one of the electives in the senior year.

‡ Offered both winter and spring quarters.

Spring Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Chem.E. 103	Unit Operations	6	4	2	4
Org.Chem. 153	Elementary Organic Chemistry.....	5	.....	5	6
Phys.Chem. 103	Physical Chemistry	3	1	3	.....
Chem. E. 131	Industrial Inorganic Chemistry.....	4	1	4	.....

Summer Session

Summer practice consisting of Chem.E. 151f,su-152w,su, Chemical Manufacture, 6 cred. will be taken by students in Chemical Engineering in the regular Summer Session between their junior and senior years. It is required for the degree of bachelor of chemical engineering.

SENIOR YEAR

Fall Quarter

Phys.Chem. 104	Physical Chemistry Laboratory	2	1	.....	5
E.E. 43	Electric Power	3	.....	2	2
Chem.E. 121	Chemical Engineering Economics.....	3	.....	3	.....
Chem.E. 132	Industrial Organic Chemistry.....	3	1	4	.....
M.&M. 85†	Strength of Materials.....	3	3	.....	.....
M.&M. 87†	Materials Laboratory	1	.....	.....	2
Met. 160§	Metallography	3	.....	2	3
	Electives*				

Winter Quarter

Phys.Chem. 105	Physical Chemistry Laboratory	2	1	.....	5
E.E. 44	Electric Power	3	.....	2	2
Chem.E. 117	Chemical Engineering Equipment Design.....	3	2	1	4
Met. 160§	Metallography	3	.....	2	3
	Electives*				

Spring Quarter

Phys.Chem. 106	Physical Chemistry Laboratory	2	1	.....	5
E.E. 45	Electric Power	3	.....	2	2
Chem.E. 118	Chemical Engineering Equipment Design.....	3	2	1	4
Chem.E. 187	Chemical Engineering Trip (spring vacation).....	2	.....	.....	.....
	Electives*				

CIVIL ENGINEERING

Two four-year courses are offered: Civil Engineering I and Civil Engineering II (Public Service Option).

CIVIL ENGINEERING I

In addition to the prescribed courses, sufficient electives must be taken to complete a total of at least 207 credits for graduation. This is an average of about 17 credits per quarter.

The principal aim of the curriculum in civil engineering is to present to the student an opportunity to become familiar with the methods of science, so that in his attack upon any professional problem he may employ his abilities with economy and secure dependable conclusions. A secondary but important object of the course is to train the student in technique, so that at graduation he may be an economic asset to his employer.

The technique of surveying and platting, drawing, and certain laboratory procedures is taught throughout the course. Typical problems of railroad, highway, hydraulic, structural, and municipal engineering occupy the greater part of the last two years. In the junior year, there is a course of lectures and conferences on the relations of engineering

* For list of elective courses in other colleges, see page 68.

† For permissible substitute, see Institute of Technology, Description of Courses and Schedule of Classes, page 71.

§ Met. 160 may be taken fall or winter quarter.

projects to business and to public affairs. Elective courses are available in each of the three upper years; these offer a wide range of choice to the student who desires to extend his range of interests to those fields of knowledge and action related to civil engineering, but not strictly included therein.

For freshman year, see page 16.

SOPHOMORE YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
M.&M. 24	Calculus I: Differential.....	5	5	.....	.....
Phys. 7	General Physics	5	1	4	2
Draw. 21	Drafting	2	.....	.....	6
C.E. 11	Surveying	3	1	.....	7
	Electives*				

Winter Quarter

M.&M. 25	Calculus II: Integral.....	5	5	.....	.....
Phys. 8	General Physics	5	1	4	2
Draw. 22	Structural Detailing	2	.....	.....	6
C.E. 12	Surveying	3	1	.....	7
	Electives*				

Spring Quarter

M.&M. 26	Technical Mechanics: Statics.....	5	5	.....	.....
Phys. 9	General Physics	5	1	4	2
Draw. 23	Structural Detailing	2	.....	.....	6
C.E. 13	Surveying	3	1	.....	7
	Electives*				

JUNIOR YEAR

Fall Quarter

M.&M. 128	Strength of Materials.....	5	5	.....	.....
M.&M. 141	Materials Laboratory	2	.....	1	2
C.E. 14	Surveying	3	.....	.....	8
C.E. 31	Stresses in Structures.....	2	.....	2	2
C.E. 51	Highways and Pavements.....	3	.....	2	3
	Electives*				

Winter Quarter

M.&M. 129	Hydraulics	4	3	1	.....
M.&M. 143	Hydraulics Laboratory	1	.....	.....	2
C.E. 15	Surveying	2	.....	4	.....
C.E. 21	Railway Engineering	2	1	.....	4
C.E. 32	Stresses in Structures.....	3	.....	2	4
C.E. 52	Highways and Pavement.....	3	1	1	4
	Electives*				

Spring Quarter

M.&M. 127	Technical Mechanics: Dynamics.....	5	5	.....	.....
C.E. 16	Surveying	2	.....	2	4
C.E. 22	Railway Engineering	2	1	.....	4
C.E. 33	Elementary Structural Design.....	4	.....	2	6
C.E. 53	Civil Engineering Practice.....	3	1	2	.....
	Electives*				

Summer Camp

C.E. 23	Summer camp is held in the vacation preceding the senior year for 4 weeks beginning the last of August. Required of all students taking the courses in Civil Engineering, Fee, \$25	9			
	Health Service fee, \$1.				

* For list of elective courses in other colleges, see page 68.

SENIOR YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
C.E. 121	Railway Engineering	3	.....	1	6
C.E. 130	Statically Indeterminate Structures.....	3	.....	2	2
C.E. 141	Reinforced Concrete	3	.....	2	2
C.E. 161	Power	4	.....	2	6
C.E. 146	Plain Concrete	3	.....	2	4
or					
G.E. 101	Contracts and Specifications.....	3	.....	3	.....
	Electives*				

Winter Quarter

C.E. 131	Analysis of Bridges and Buildings.....	2	.....	2	2
C.E. 142	Reinforced Concrete Design.....	3	.....	2	2
C.E. 162	Water Supply and Sewerage.....	3	.....	2	4
C.E. 109	Cadastral Surveying	2	.....	2	.....
or					
C.E. 124	Transportation	3	3	.....	.....
or					
C.E. 147	Foundations	2	.....	2	.....
or					
C.E. 156	Highway Transport	3	.....	3	.....
M.E. 42	Power	4	2	2	.....
C.E. 137†	Structural Laboratory	2	.....	1	3
or					
G.E. 101	Contracts and Specifications.....	3	.....	3	.....
	Electives*				

Spring Quarter

C.E. 132	Design of Bridges and Buildings.....	2	.....	1	3
C.E. 163	Water Supply and Sewerage.....	3	.....	2	5
C.E. 146	Plain Concrete	3	.....	2	4
or					
C.E. 137†	Structural Laboratory	2	.....	1	3
E.E. 42	Power	3	3	.....	.....
	Electives*				

CIVIL ENGINEERING II (PUBLIC SERVICE OPTION)

The purpose of this curriculum is to present civil engineering as a part of the larger undertakings of social economy. All technical engineering practice exists in an environment of governmental or industrial control; this option places emphasis on the external relationships of engineering to these controlling forces as well as on its internal techniques. Graduates will be eligible candidates for graduate fellowships offered in public service and public health engineering.

The freshman year is identical with that of other engineering curricula. The mathematics and science courses common to all engineering courses as well as the elements of civil engineering are required subjects. The electives provided permit the student to take advanced work in surveying or structural engineering or highway engineering or advanced work in physical sciences, political science, public health, or business administration.

Application for admission must be approved by the Department of Civil Engineering. For freshman year, see page 16.

* For list of elective courses in other colleges, see page 68.

† C.E. 137 limited to 20 students.

SOPHOMORE YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
M.&M. 24	Calculus I: Differential.....	5	5	.....	.....
Phys. 7	General Physics	5	1	4	2
C.E. 11	Surveying	3	1	.....	7
Org.Chem. 54	Elementary Organic Chemistry.....	3	1	3	.....
Econ. 8	General Economics	3	3	.....	.....

Winter Quarter

M.&M. 25	Calculus II: Integral.....	5	5	.....	.....
Phys. 8	General Physics	5	1	4	2
C.E. 12	Surveying	3	1	.....	7
Org.Chem. 55	Elementary Organic Chemistry.....	3	1	3	.....
Econ. 9	General Economics	3	3	.....	.....

Spring Quarter

M.&M. 26	Technical Mechanics: Statics	5	5	.....	.....
Phys. 9	General Physics	5	1	4	2
C.E. 13	Surveying	3	1	.....	7
Anal.Chem. 7	Quantitative Analysis	4	1	1	8
Econ. 28	Business Law	3	3	.....	.....

JUNIOR YEAR

Fall Quarter

M.&M. 128	Strength of Materials.....	5	5	.....	.....
M.&M. 141	Materials Laboratory	2	.....	1	2
C.E. 31	Stresses in Structures.....	2	.....	2	2
C.E. 51	Highways and Pavements.....	3	.....	2	3
Pol.Sci. 1	American Government and Politics.....	3	3	.....	.....

Winter Quarter

M.&M. 129	Hydraulics	4	3	1	.....
M.&M. 143	Hydraulics Laboratory	1	.....	.....	2
C.E. 32	Stresses in Structures.....	3	.....	2	4
B.A. 58	Elements of Public Finance.....	3	3	.....	.....
Pol.Sci. 2	American Government and Politics.....	3	3	.....	.....
Sp. 1	Fundamentals of Speech.....	3	3	.....	.....

Spring Quarter

M.&M. 127	Technical Mechanics: Dynamics.....	5	5	.....	.....
C.E. 33	Elementary Structural Design.....	4	.....	2	6
Econ. 29	Principles of Accounting.....	3	3	.....	.....
Econ. 161	Labor Problems and Trade Unionism.....	3	3	.....	.....
Pol.Sci. 3	American Government and Politics.....	3	3	.....	.....

SENIOR YEAR

Fall Quarter

C.E. 141	Reinforced Concrete	3	2	.....	2
C.E. 146	Plain Concrete	3	.....	2	4
C.E. 161	Power	4	.....	2	6
P.M.&P.H. 50	Public and Personal Health.....	3	3	.....	.....
G.E. 101	Contracts and Specifications	3	.....	3	.....
	Electives*				

* For list of elective courses in other colleges, see page 68.

Winter Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
C.E. 162	Water Supply and Sewerage.....	3	.....	2	4
Bact. 53	General Bacteriology	5	.....	4	8
Econ. 167	Personnel Administration	3	3	.....	.....
M.E. 42	Power	4	2	2	.....
	Electives*				

Spring Quarter

C.E. 163	Water Supply and Sewerage.....	3	.....	2	5
C.E. 165	Public Health Engineering.....	3	.....	3	.....
E.E. 42	Power	3	3	.....	.....
	Electives*				

Three groups of electives are suggested:

A. Sciences and Mathematics	B. Social Sciences and Language	C. Engineering
Chemistry	Economics and Business	Surveying
Physics	Political Science	Highway Engineering
Geology	Public Speaking	Railway Engineering
Mathematics	English	Structural Engineering
	Modern Language	Metallography

ELECTRICAL ENGINEERING

Four-year course leading to the degree of bachelor of electrical engineering, B.E.E.

In addition to the prescribed courses, sufficient electives must be taken to complete a total of at least 207 credits for graduation.

The course in Electrical Engineering is designed to fit the student for a position of responsibility in the electrical field. This work is based upon the principles of electricity and magnetism contained in the prescribed courses in general physics and upon the principles of mathematics. In the senior year, specialized courses may be selected in the field of electric power generation, transmission, and utilization, in telephone and radio communication or in illumination.

The main laboratory of the department is well equipped for preliminary training in the operation of electrical machinery and for advanced research problems in this field. The communication laboratories contain, besides the general equipment for the study of circuits, special apparatus for the study of radio and electro-acoustical problems.

Graduate courses in this department, as well as in physics and mathematics, are available for those with exceptional ability who desire training beyond the usual four-year undergraduate curriculum.

Students taking the five-year combined course with business administration may substitute business courses for Draw. 26, M.&M. 141, M.E. 13, 17, and 26, Phys. 144, and E.E. 132, 134, and 136. In addition they are required to take courses E.E. 141, 142, and 143.

For freshman year, see page 16.

SOPHOMORE YEAR

Fall Quarter

M.&M. 24	Calculus I: Differential.....	5	5	.....	.....
Phys. 7	General Physics	5	1	4	2
M.E. 13	Forging, Welding and Heat Treating.....	2	.....	2	3
E.E. 11	Elements of Electrical Engineering.....	3	2	1	.....
	Electives*				

* For list of elective courses in other colleges, see page 68.

Winter Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
M.&M. 25	Calculus II: Integral.....	5	5	.....	.....
Phys. 8	General Physics	5	1	4	2
Draw. 26¶	Drafting	2	.....	.....	6
E.E. 13	Elements of Electrical Engineering.....	3	2	1	.....
E.E. 14	Elements of Electrical Engineering Laboratory.....	1	.....	.....	2
	Electives*				

Spring Quarter

M.&M. 26	Technical Mechanics: Statics.....	5	5	.....	.....
Phys. 9	General Physics	5	1	4	2
E.E. 15	Elements of Electrical Engineering.....	3	2	1	.....
E.E. 16	Elements of Electrical Engineering Laboratory.....	1	.....	.....	2
M.E. 17	Machine Shop Practice.....	2	.....	2	3
	Electives*				

JUNIOR YEAR§

Fall Quarter

M.&M. 129	Hydraulics	4	3	1	.....
M.&M. 143	Hydraulics Laboratory	1	.....	.....	2
E.E. 111	Electrical Engineering	5	5	.....	.....
E.E. 112	Electrical Engineering Laboratory.....	2	.....	.....	4
Phys. 144	Electrical Measurements	3	1	1	4
	Electives*				

Winter Quarter

M.&M. 127	Technical Mechanics: Dynamics.....	5	5	.....	.....
E.E. 113	Electrical Engineering	3	3	.....	.....
E.E. 114	Electrical Engineering Laboratory.....	1	.....	.....	2
E.E. 117	Engineering Electronics	3	2	.....	2
M.E. 26	Mechanism and Kinematics.....	3	3	.....	.....
	Electives*				

Spring Quarter

M.&M. 128	Strength of Materials.....	5	5	.....	.....
M.&M. 141	Materials Laboratory	2	.....	1	2
E.E. 115	Electrical Engineering	3	3	.....	.....
E.E. 116	Electrical Engineering Laboratory.....	1	.....	.....	2
E.E. 119	Engineering Electronics	3	2	.....	2
	Electives*				

SENIOR YEAR

POWER OPTION

Fall Quarter

E.E. 121	Electrical Engineering	3	3	.....	.....
E.E. 122	Electrical Engineering Laboratory.....	2	.....	.....	4
E.E. 132†	Electrical Design	2	2	.....	.....
M.E. 40†	Heat Engines	3	2	.....	3
	Electives*				

* For list of elective courses in other colleges, see page 68.

† Students specializing in chemistry, mathematics, or physics may substitute electives in that department for courses E.E. 132, 134, 136 and M.E. 40, 41, and 55. Such specialization requires at least 18 credits of elective work in chemistry, physics, or mathematics.

§ Students expecting to elect the communication option in the senior year must take E.E. 64-65-66, Elements of Communication, in the junior year.

¶ For permissible substitute, see Institute of Technology, Description of Courses and Schedule of Classes, page 71.

Winter Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
E.E. 123	Electrical Engineering	3	3	.....	.....
E.E. 124	Electrical Engineering Laboratory.....	2	.....	.....	4
E.E. 134†	Electrical Design	2	2	.....	.....
M.E. 41†	Heat Engines	3	2	.....	3
	Electives*				

Spring Quarter

E.E. 100	Inspection Trip (spring vacation).....	2	.....	.....	.....
E.E. 125	Electrical Engineering	3	3	.....	.....
E.E. 126	Electrical Engineering Laboratory.....	2	.....	.....	4
E.E. 136††	Electrical Design	2	2	.....	.....
M.E. 55†	Internal Combustion Engines.....	3	2	.....	3
	Electives*				

COMMUNICATION OPTIONS‡

Fall Quarter

E.E. 121	Electrical Engineering	3	3	.....	.....
E.E. 122	Electrical Engineering Laboratory.....	2	.....	.....	4
E.E. 161	Radio Communication	3	.....	2	3
E.E. 164	Electrical Communication	4	.....	2	4
	Electives*				

Winter Quarter

E.E. 123	Electrical Engineering	3	3	.....	.....
E.E. 124	Electrical Engineering Laboratory.....	2	.....	.....	4
E.E. 162	Radio Communication	3	.....	2	3
E.E. 165	Electrical Communication	4	.....	2	4
	Electives*				

Spring Quarter

E.E. 100	Inspection Trip (spring vacation).....	2	.....	.....	.....
E.E. 125	Electrical Engineering	3	3	.....	.....
E.E. 126	Electrical Engineering Laboratory.....	2	.....	.....	4
E.E. 163	Radio Communication	3	.....	2	3
E.E. 166	Electrical Communication	4	.....	2	4
	Electives*				

SPECIALIZED COURSES IN ELECTRICAL ENGINEERING

The number of electives in the electrical engineering course makes it practicable to obtain either a broad or a specialized education. Further to facilitate such election, certain courses in the senior year may be replaced by substitutes in chemistry, mathematics, or physics, subject to the approval of the head of the department and the Students' Work Committee. By properly choosing prerequisite subjects during the sophomore or junior year, a far-seeing student may prepare for advanced specialized courses in the following undergraduate and graduate years. As examples, one may specialize in business, chemistry, communication, illumination, manufacturing, military science and tactics, naval science and tactics, physics, power generation and distribution, public utilities, railway engineering, or other chosen line. Students are advised to consult with their classifiers, or with the head of the department, concerning desirable sequences of general or special courses.

* For list of elective courses in other colleges, see page 68.

‡ Students expecting to elect the communication option in the senior year must take E.E. 64-65-66, Elements of Communication, in the junior year.

† Students specializing in business may substitute an approved elective in that department for Course E.E. 136.

ENGINEERING AND BUSINESS ADMINISTRATION

For many years engineers have recognized the importance of a knowledge of the principles of economics in connection with their profession. Engineering students are encouraged to elect courses of various kinds in the fields of economics and administration when it is possible for them to find time to do so. This is true in all of the branches of engineering.

With the vast expansion which has taken place in the manufacturing industries in the United States, there has arisen a need for engineers having more training in economics and administration than is usually possible in the four-year engineering courses. To meet this need special groups of elective courses have been arranged. The recent economic stress has further emphasized the importance of a combination of engineering and business training in preparation for the industrial problems of the future.

The *Engineering Prebusiness course* described on page 52 provides a four-year combined curriculum in business administration with a background of the fundamental mathematics, chemistry, English, physics, and drawing, of the engineering courses.

As a further step to provide adequate training in engineering or chemistry, combined with business administration, a plan of *five-year courses leading to two degrees* has been arranged for the capable student who wishes to enter upon a comprehensive professional training in this combined field.

Students who desire to elect courses in economics and business administration without undertaking the five-year combined course may well include the economics, business law, accounting, and corporation finance of the first two years in this program and then select such other courses of the sequence as they may prefer. No special optional group of courses is necessary for this purpose.

FIVE-YEAR COMBINED COURSES WITH BUSINESS ADMINISTRATION

The new plan of five-year combined courses in Engineering, Architecture (six years), or Chemistry with Business Administration enables the student to complete the requirements for the Bachelor's degrees in both fields, as, for example, bachelor of electrical engineering and bachelor of business administration. Five years will usually be necessary for the completion of the combined course, but a longer time, perhaps six years, may be required if suitable programs cannot be arranged for the five-year period. This will depend upon the particular curriculum with which the combination with business administration is made.

For this purpose the School of Business Administration will accept the 74 credits in business subjects shown in the following list in conjunction with one of the regular curricula in engineering, architecture, or chemistry, as satisfying the requirements for the degree of bachelor of business administration. The student receives his engineering degree upon the completion of his regular course, altho this may not be until the end of the fifth year. He is not eligible for the degree in business administration on this 74-credit basis unless the *work is taken in conjunction with one of the regular curricula in this college.*

The business courses are intended to be spread over four years, beginning the business sequence in the sophomore year by taking economics and business law, 3 credits per quarter, as electives, in addition to the usual engineering program.

Normally, some of the required technical work of the senior year will be postponed to the fifth year to make room for business courses, in order to secure a desirable distribution of the latter rather than to concentrate them in the fifth year. Not more than 28 credits of business should be left for the fifth year.

In certain curricula, special concessions are made to students taking this five-year combined course by permitting them to omit certain required courses or to substitute

business courses for them. (See Aeronautical, Agricultural, Chemical, and Electrical Engineering.)

Under this plan the student will be registered in the Institute of Technology and in the School of Business Administration for the entire combined program. His registration for each quarter beginning with the school year is subject to *approval by the adviser representing the School of Business Administration* as well as by the regular classifier.

No student is considered officially registered in the five-year business engineering combination unless he has the approval of the Five-Year Student Work Committee, Room 201 Mechanical Engineering.

The following order and distribution by years are suggested. With the approval of the adviser in the School of Business Administration both may be varied, however, so as to accommodate individual programs. However, to avoid conflicts in programming classes the student should follow the arrangement for his curriculum given on pages 40 to 52.

SECOND YEAR

Course No.	Title	Credits		
		F	W	S
Econ. 8f,w-9w,s	General Economics	3	3	.....
Econ. 28f,s	Business Law (8, 9).....	.....	.....	3

THIRD YEAR

B.A. 54f-55w*	Elementary Accounting: Combined Course.....	4	4	.....
B.A. 77f,w,s	Survey in Marketing.....	.....	.....	3

FOURTH YEAR

B.A. 58f,w,s	Elements of Public Finance (8, 9).....	.....	3	.....
B.A. 70f	Statistics Survey (8, 9).....	3	.....	.....
B.A. 71f,w,s	Transportation: Services and Charges I (8, 9).....	.....	.....	3
B.A. 89f,w,s§	Production Management (8, 9).....	.....	.....	3
B.A. 112f,w,s	Business Statistics (70).....	.....	3	.....
B.A. 130f,s	Cost Accounting Survey (26, 29 or 55).....	.....	.....	3
B.A. 142f,w,s	Advanced Money and Banking (8, 9).....	3	.....	.....
B.A. 167f,w	Personnel Administration (161).....	.....	3	.....
Econ. 161f,w,s	Labor Problems and Trade Unionism (8, 9).....	3	.....	.....

FIFTH YEAR

B.A. 155f,w,s	Corporation Finance (8, 9).....	3	.....	.....
B.A. 101f,w,s- 102f,w,s	Advanced General Economics (8, 9).....	3	3	.....
B.A. 180f-181w- 182Gs	Senior Topics: Production Management (89, 130).....	3	3	3
Econ. 149f,w,s	Business Cycles (142).....	.....	3	.....
Econ. 175f,w,s	Government Regulation of Business (8, 9).....	.....	.....	3
One of the following:				
B.A. 133s	Standard Costs .....	.....	.....	3
B.A. 139f,w,s	Advanced General Accounting (26).....	.....	.....	3
B.A. 180f-181Cw	Senior Topics: Marketing	3	3	.....
Total credits				74

* If Econ. 54-55 cannot be scheduled, Econ. 20, 25, and 26 may be substituted.

§ Mechanical engineering students substitute M.E. 171 for B.A. 89 and replace the latter with an approved business course, preferably B.A. 180C. Credit will not be given for both M.E. 171 and B.A. 89.

AERONAUTICAL ENGINEERING WITH BUSINESS ADMINISTRATION

SECOND YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Aero.E. 3	Aeronautics	3	3	.....	.....
Econ. 8	General Economics	3	3	.....	.....
M.&M. 24	Calculus I: Differential	5	5	.....	.....
M.E. 70	Mechanical Technology	1	.....	2	.....
Phys. 7	General Physics	5	1	4	2

Winter Quarter

Aero.E. 2	Aircraft and Auto Engines	3	1	2	2
Econ. 9	General Economics	3	3	.....	.....
M.&M. 25	Calculus II: Integral	5	5	.....	.....
M.E. 13	Forging, Welding and Heat Treating	2	.....	2	3
Phys. 8	General Physics	5	1	4	2

Spring Quarter

Aero.E. 1	Aeronautics	3	3	.....	.....
Econ. 28	Business Law	3	3	.....	.....
M.&M. 26	Technical Mechanics: Statics	5	5	.....	.....
M.E. 5	Pattern Practice	2	.....	2	3
Phys. 9	General Physics	5	1	4	2

THIRD YEAR

Fall Quarter

Aero.E. 100	Aerodynamics	3	3	.....	.....
B.A. 54	Elementary Accounting: Combined Course	4	4	.....	.....
M.&M. 128	Strength of Materials	5	5	.....	.....
M.&M. 141	Materials Laboratory	2	.....	1	2
M.E. 32	Elementary Mechanical Laboratory	2	.....	.....	4
M.E. 131	Thermodynamics	3	3	.....	2

Winter Quarter

Aero.E. 101	Aerodynamics	3	3	.....	.....
B.A. 55	Elementary Accounting: Combined Course	4	4	.....	.....
Draw. 28	Drafting	2	.....	.....	6
M.E. 18	Machine Shop Practice	2	.....	2	3
M.E. 26	Mechanism and Kinematics	3	3	.....	.....
M.E. 132	Thermodynamics	3	2	1	.....

Spring Quarter

Aero.E. 102	Aerodynamics	3	3	.....	.....
B.A. 58	Elements of Public Finance	3	3	.....	.....
B.A. 77	Survey in Marketing	3	1	2	.....
Draw. 29	Drafting	2	.....	.....	6
M.&M. 127	Technical Mechanics: Dynamics	5	5	.....	.....
M.E. 27	Machine Design	3	.....	2	3

FOURTH YEAR

Fall Quarter

Aero.E. 158	Physics of the Atmosphere	2	2	1	.....
B.A. 70	Statistics Survey	3	3	.....	.....
B.A. 142	Advanced Money and Banking	3	3	.....	.....
Econ. 161	Labor Problems and Trade Unionism	3	3	.....	.....
M.&M. 129	Hydraulics	4	3	1	.....
M.&M. 143	Hydraulics Laboratory	1	.....	.....	2
M.E. 150	Internal Combustion Engines	3	3	.....	.....

INSTITUTE OF TECHNOLOGY

Winter Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Aero.E. 141	Aerodynamics Laboratory	3	1	---	6
B.A. 71	Transportation: Services and Charges I.....	3	3	---	---
B.A. 112	Business Statistics	3	3	---	---
B.A. 155	Corporation Finance	3	3	---	---
B.A. 167	Personnel Administration	3	3	---	---
M.E. 151*	Advanced Internal Combustion Engines	3	3	---	---

Spring Quarter

Aero.E. 83	Stresses in Simple Structures.....	3	3	---	---
Aero.E. 140	Aeronautical Laboratory	2	---	---	6
Aero.E. 170	Air Transport	2	2	---	---
B.A. 89	Production Management	3	3	---	---
B.A. 130	Cost Accounting Survey.....	3	3	---	---
M.E. 154*	Design of Airplane Engines.....	2	---	---	6

FIFTH YEAR

Fall Quarter

Aero.E. 115	Airplane Stresses	3	2	---	2
Aero.E. 120	Airplane Design	3	2	---	2
B.A. 180G	Seniors Topics: Production Management.....	3	3	---	---
Econ. 149	Business Cycles	3	3	---	---
Econ. 175	Government Regulation of Business.....	3	3	---	---
E.E. 46	Electric Power	3	3	---	---

Winter Quarter

Aero.E. 121	Airplane Design	3	2	---	2
Aero.E. 190	Seminar	1	1	---	---
B.A. 101	Advanced General Economics.....	3	3	---	---
B.A. 139	Advanced General Accounting.....	3	3	---	---
B.A. 181G	Senior Topics: Production Management.....	3	3	---	---
E.E. 47	Electric Power	3	3	---	---
	Optional Course	3	---	---	---

Spring Quarter

Aero.E. 122	Airplane Design	3	1	---	6
Aero.E. 155	Aeronautical Calculations	2	2	---	---
Aero.E. 159	Inspection Trip (spring vacation).....	1	---	---	---
Aero.E. 191	Seminar	1	1	---	---
B.A. 102	Advanced General Economics.....	3	3	---	---
B.A. 165†	Economics of Public Utilities.....	3	3	---	---
B.A. 182G	Senior Topics: Production Management.....	3	3	---	---
M.E. 158	Aero Engine Testing	2	---	---	6

AGRICULTURAL ENGINEERING WITH BUSINESS ADMINISTRATION

SECOND YEAR

Fall Quarter

Ag.E. 5	Farm Structures Laboratory	3	---	1	4
Ag.E. 43	Mechanical Laboratory	3	---	1	5
Econ. 8	General Economics	3	3	---	---
M.&M. 24	Calculus I: Differential.....	5	5	---	---
Phys. 7	General Physics	5	1	4	2

*Only one of the Courses 151 or 154 is required. Students wishing to take M.E. 154 will take Aero.E. 83 in the winter in place of M.E. 151.

† May be programmed either in fall or spring quarters.

Winter Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Econ. 9	General Economics	3	3	.....	.....
M.&M. 25	Calculus II: Integral	5	5	.....	.....
Phys. 8	General Physics	5	1	4	2
Soils 9	Soils	4	4	.....	.....

Spring Quarter

Ag.E. 18	Agricultural Automotives	4	.....	2	6
Ag.E. 21	Elements of Surveying	5	.....	1	12
M.&M. 26	Technical Mechanics: Statics	5	5	.....	.....
Phys. 9	General Physics	5	1	4	2

THIRD YEAR

Fall Quarter

Ag.E. 52	Elements of Farm Machinery	3	1	1	3
Econ. 20	Elements of Accounting	3	3	.....	.....
M.&M. 127	Technical Mechanics: Dynamics	5	5	.....	.....
M.&M. 129	Hydraulics	4	3	1	.....
M.&M. 143	Hydraulics Laboratory	1	.....	.....	2
M.E. 131	Thermodynamics	3	3	.....	2

Winter Quarter

Ag.E. 51 or Soils 108	Land Reclamation	5	1	4	.....
B.A. 58	Physical Properties of Soils.....	3	.....	1	6
B.A. 77	Elements of Public Finance.....	3	3	.....	.....
Econ. 25	Survey in Marketing	3	3	.....	.....
M.&M. 128	Principles of Accounting	3	3	.....	.....
M.E. 26	Strength of Materials	5	5	.....	.....
	Mechanism and Kinematics	3	3	.....	.....

Spring Quarter

Ag.E. 37	Rural Sanitation and Water Supply.....	3	.....	3	.....
Ag.E. 53	Farm Structures	3	1	1	3
Ag.E. 72 or Ag.E. 73	Applied Electricity	3	.....	1	6
Ag.E. 73	Steam Boilers and Heat Engines.....	3	1	1	3
Ag.E. 1	General Farm Crops	3	3	.....	.....
Econ. 28	Business Law	3	3	.....	.....
M.E. 27	Machine Design	3	.....	2	3

FOURTH YEAR

Fall Quarter

Ag.E. 67	Advanced Farm Structures Design.....	3	1	1	4
Ag.E. 71	Design and Economics of Agricultural Machinery.....	3	.....	2	3
B.A. 70	Statistics Survey	3	3	.....	.....
B.A. 89	Production Management	3	3	.....	.....
B.A. 142	Advanced Money and Banking.....	3	3	.....	.....
C.E. 146	Plain Concrete	3	.....	2	4

Winter Quarter

Ag.Econ. 102	Farm Management: Organization.....	3	.....	3	.....
Ag.E. 51 or Soils 108	Land Reclamation	5	1	4	.....
B.A. 71	Physical Properties of Soils.....	3	.....	1	6
B.A. 77	Transportation: Services and Charges I.....	3	3	.....	.....
Econ. 26	Survey in Marketing	3	3	.....	.....
	Principles of Accounting	3	3	.....	.....

INSTITUTE OF TECHNOLOGY

Spring Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Ag.E. 72	Applied Electricity	3	.....	1	6
or					
Ag.E. 73	Steam Boilers and Heat Engines.....	3	1	1	2
An.Husb. 1	Livestock Production	3	.....	3	3
B.A. 112	Business Statistics	3	3	.....	.....
B.A. 130	Cost Accounting Survey.....	3	3	.....	.....
B.A. 139	Advanced General Accounting.....	3	3	.....	.....
Econ. 161	Labor Problems and Trade Unionism.....	3	3	.....	.....

FIFTH YEAR

Fall Quarter

B.A. 101	Advanced General Economics	3	3	.....	.....
B.A. 167	Personnel Administration	3	3	.....	.....
B.A. 180G	Senior Topics: Production Management.....	3	3	.....	.....
C.E. 37	Structural Engineering	3	.....	2	4
Geol. 5	Engineering Geology	3	.....	3	.....
Rhet. 22	Public Speaking	3	3	.....	.....

Winter Quarter

B.A. 102	Advanced General Economics	3	3	.....	.....
B.A. 155	Corporation Finance	3	3	.....	.....
B.A. 181G	Senior Topics: Production Management.....	3	3	.....	.....
Econ. 175	Government Regulation of Business.....	3	3	.....	.....
G.E. 101	Contracts and Specifications	3	.....	3	.....

Spring Quarter

B.A. 182G	Senior Topics: Production Management.....	3	3	.....	.....
Dy.Husb. 1	Elements of Dairying	3	.....	3	.....
Econ. 149	Business Cycles	3	3	.....	.....

CHEMICAL ENGINEERING WITH BUSINESS ADMINISTRATION

SECOND YEAR

Fall Quarter

Econ. 8	General Economics	3	3	.....	.....
Inorg.Chem. 13	Qualitative Analysis	5	1	2	8
M.&M. 24	Calculus I: Differential	5	5	.....	.....
Phys. 7	General Physics	5	1	4	2

Winter Quarter

Anal.Chem. 1	Quantitative Analysis	5	1	1	10
Econ. 9	General Economics	3	3	.....	.....
M.&M. 25	Calculus II: Integral	5	5	.....	.....
Phys. 8	General Physics	5	1	4	2

Spring Quarter

Anal.Chem. 2	Quantitative Analysis	5	1	1	10
Chem.E. 80	Chemical Engineering Materials.....	1	.....	2	.....
Econ. 28	Business Law	3	3	.....	.....
M.&M. 84	Technical Mechanics	5	5	.....	.....
Phys. 9	General Physics	5	1	4	2

THIRD YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
B.A. 54*	Elementary Accounting: Combined Course.....	4	4	.....	.....
Chem.E. 101	Unit Operations	3	2	2	.....
Chem.E. 105	Fuels and Combustion.....	4	2	2	4
German 24	Chemical German	3	3	.....	.....
Org.Chem. 51	Organic Chemistry	5	.....	5	6

Winter Quarter

B.A. 55*	Elementary Accounting: Combined Course.....	4	4	.....	.....
Chem.E. 102	Unit Operations	6	4	2	4
German 25	Chemical German	3	3	.....	.....
Org.Chem. 52	Organic Chemistry	5	.....	5	6

Spring Quarter

B.A. 77	Survey in Marketing.....	3	1	2	.....
Chem.E. 103	Unit Operations	6	4	2	4
German 26	Chemical German	3	3	.....	.....
Org.Chem. 153	Organic Chemistry	5	.....	5	6

FOURTH YEAR

Fall Quarter

B.A. 70	Statistics Survey	3	3	.....	.....
B.A. 101	Advanced General Economics.....	3	3	.....	.....
M.&M. 85	Strength of Materials.....	3	3	.....	.....
M.&M. 87	Materials Testing Laboratory	1	.....	.....	2
Met. 152	Metallography	3	.....	2	2
Phys.Chem. 101	Physical Chemistry	3	1	3	.....
Phys.Chem. 104	Physical Chemistry Laboratory	2	1	.....	5

Winter Quarter

B.A. 102	Advanced General Economics.....	3	3	.....	.....
B.A. 112	Business Statistics	3	3	.....	.....
Econ. 161	Labor Problems and Trade Unionism.....	3	3	.....	.....
M.E. 38	Heat Engines	3	1	2	.....
M.E. 39	Heat Engines Laboratory	1	.....	.....	3
Phys.Chem. 102	Physical Chemistry	3	1	3	.....
Phys.Chem. 105	Physical Chemistry Laboratory	2	1	.....	5

Spring Quarter

B.A. 71	Transportation: Services and Charges I.....	3	3	.....	.....
B.A. 130	Cost Accounting Survey	3	3	.....	.....
Chem.E. 131	Industrial Inorganic Chemistry.....	4	1	4	.....
Econ. 149	Business Cycles	3	3	.....	.....
Phys.Chem. 103	Physical Chemistry	3	1	3	.....
Phys.Chem. 106	Physical Chemistry Laboratory	2	1	.....	5

Summer Session

Chem.E. 151-152	Chemical Manufacture	6
-----------------	----------------------------	---	-------	-------	-------

FIFTH YEAR

Fall Quarter

B.A. 58	Elements of Public Finance.....	3	3	.....	.....
B.A. 89†	Production Management	3	3	.....	.....
or					
Chem.E. 121†	Chemical Engineering Economics.....	3	.....	3	.....
B.A. 155	Corporation Finance	3	3	.....	.....
B.A. 180G	Senior Topics: Production Management.....	3	3	.....	.....
Chem.E. 132	Industrial Organic Chemistry.....	3	1	4	.....
E.E. 43	Electric Power	3	.....	2	2

* Students may take Econ. 20, 25, and 26, in place of B.A. 54 and 55.

† Students will receive credit for only one of these courses.

Winter Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
B.A. 142	Advanced Money and Banking	3	3	.....	.....
B.A. 167	Personnel Administration	3	3	.....	.....
B.A. 181G	Senior Topics: Production Management	3	3	.....	.....
Chem.E. 117	Chemical Engineering Equipment Design	3	2	1	4
E.E. 37 or 44	Electric Power	3	.....	2	2

Spring Quarter

B.A. 139	Advanced General Accounting	3	3	.....	.....
B.A. 182G	Senior Topics: Production Management	3	3	.....	.....
Chem.E. 118	Chemical Engineering Equipment Design	3	2	1	4
Chem.E. 187	Chemical Engineering Trip (spring vacation)	2	.....	.....	.....
Econ. 175	Government Regulation of Business	3	3	.....	.....
E.E. 45	Electric Power	3	.....	2	2

CIVIL ENGINEERING WITH BUSINESS ADMINISTRATION

SECOND YEAR

Fall Quarter

C.E. 11	Surveying	3	1	.....	7
Draw. 21	Drafting	2	.....	.....	6
Econ. 8	General Economics	3	3	.....	.....
M.&M. 24	Calculus I: Differential	5	5	.....	.....
Phys. 7	General Physics	5	1	4	2

Winter Quarter

C.E. 12	Surveying	3	1	.....	7
Draw. 22	Structural Detailing	2	.....	.....	6
Econ. 9	General Economics	3	3	.....	.....
M.&M. 25	Calculus II: Integral	5	5	.....	.....
Phys. 8	General Physics	5	1	4	2

Spring Quarter

C.E. 13	Surveying	3	1	.....	7
Draw. 23	Structural Detailing	2	.....	.....	6
Econ. 28	Business Law	3	3	.....	.....
M.&M. 26	Technical Mechanics: Statics	5	5	.....	.....
Phys. 9	General Physics	5	1	4	2

THIRD YEAR

Fall Quarter

C.E. 14	Surveying	3	.....	.....	8
C.E. 31	Stresses in Structures	2	.....	2	2
C.E. 51	Highways and Pavements	3	.....	2	3
B.A. 54	Elementary Accounting: Combined Course	4	4	.....	.....
M.&M. 128	Strength of Materials	5	5	.....	.....
M.&M. 141	Materials Laboratory	2	.....	1	2

Winter Quarter

C.E. 15	Surveying	2	.....	4	.....
C.E. 21	Railway Engineering	2	1	.....	4
C.E. 32	Stresses in Structures	3	.....	2	2
C.E. 52	Highways and Pavements	3	1	1	4
B.A. 55	Elementary Accounting: Combined Course	4	4	.....	.....
M.&M. 129	Hydraulics	4	3	1	.....
M.&M. 143	Hydraulics Laboratory	1	.....	.....	2

Spring Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
C.E. 16	Surveying	2	.....	2	4
C.E. 22	Railway Engineering	2	1	.....	4
C.E. 33	Elementary Structural Design.....	4	.....	2	6
C.E. 53	Civil Engineering Practice	3	1	2	.....
B.A. 77	Survey in Marketing	3	1	2	.....
M.&M. 127	Technical Mechanics: Dynamics	5	5	.....	.....

FOURTH YEAR

Fall Quarter

B.A. 70	Statistics Survey	3	3	.....	.....
C.E. 121	Railway Engineering	3	.....	1	6
C.E. 146	Plain Concrete	3	.....	2	4
C.E. 161	Power	4	.....	2	6
Econ. 161	Labor Problems and Trade Unionism	3	3	.....	.....

Winter Quarter

B.A. 58	Elements of Public Finance.....	3	3	.....	.....
B.A. 71	Transportation: Services and Charges I.....	3	3	.....	.....
B.A. 112	Business Statistics	3	3	.....	.....
B.A. 142	Advanced Money and Banking.....	3	3	.....	.....
C.E. 162	Water Supply and Sewerage.....	3	.....	2	4
M.E. 42	Power	4	2	2	.....

Spring Quarter

B.A. 89	Production Management	3	3	.....	.....
B.A. 130	Cost Accounting Survey.....	3	3	.....	.....
B.A. 155	Corporation Finance	3	3	.....	.....
C.E. 163	Water Supply and Sewerage.....	3	.....	2	5
E.E. 42	Power	3	3	.....	.....

Summer Session

C.E. 23	Summer Camp	9
---------	-------------------	---	-------	-------	-------

FIFTH YEAR

Fall Quarter

B.A. 139	Advanced General Accounting.....	3	3	.....	.....
B.A. 167	Personnel Administration	3	3	.....	.....
B.A. 180	Senior Topics: Production Management	3	3	.....	.....
C.E. 130	Statically Indeterminate Structures	3	.....	2	2
C.E. 141	Reinforced Concrete	3	.....	2	2
Econ. 175	Government Regulation of Business.....	3	3	.....	.....

Winter Quarter

B.A. 101	Advanced General Economics.....	3	3	.....	.....
B.A. 181G	Senior Topics: Production Management	3	3	.....	.....
C.E. 131	Analysis of Bridges and Buildings.....	2	.....	2	2
C.E. 142	Reinforced Concrete Design.....	3	.....	2	2
C.E. 109	Cadastral Surveying	2	.....	2	.....
or					
C.E. 124	Transportation	3	3	.....	.....
or					
C.E. 147	Foundations	2	.....	2	.....
or					
C.E. 156	Highway Transport	3	.....	3	.....
G.E. 101	Contracts and Specifications.....	3	.....	3	.....

Spring Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
B.A. 102	Advanced General Economics	3	3	.....	.....
B.A. 182G	Senior Topics: Production Management	3	3	.....	.....
C.E. 132	Design of Bridges and Buildings	2	.....	1	3
C.E. 137	Structural Laboratory	2	.....	1	3
Econ. 149	Business Cycles	3	3	.....	.....

ELECTRICAL ENGINEERING WITH BUSINESS ADMINISTRATION

SECOND YEAR

Fall Quarter

Econ. 8	General Economics	3	3	.....	.....
E.E. 11	Elements of Electrical Engineering	3	2	1	.....
M.&M. 24	Calculus I: Differential	5	5	.....	.....
Phys. 7	General Physics	5	1	4	2

Winter Quarter

Econ. 9	General Economics	3	3	.....	.....
E.E. 13	Elements of Electrical Engineering	3	2	1	.....
E.E. 14	Elements of Electrical Engineering Laboratory	1	.....	.....	2
M.&M. 25	Calculus II: Integral	5	5	.....	.....
Phys. 8	General Physics	5	1	4	2

Spring Quarter

Econ. 28	Business Law	3	3	.....	.....
E.E. 15	Elements of Electrical Engineering	3	2	1	.....
E.E. 16	Elements of Electrical Engineering Laboratory	1	.....	.....	2
M.&M. 26	Technical Mechanics: Statics	5	5	.....	.....
Phys. 9	General Physics	5	1	4	2

THIRD YEAR

Fall Quarter

B.A. 54	Elementary Accounting: Combined Course	4	4	.....	.....
E.E. 111	Electrical Engineering	5	5	.....	.....
E.E. 112	Electrical Engineering Laboratory	2	.....	.....	4
M.&M. 129	Hydraulics	4	3	1	.....
M.&M. 143	Hydraulics Laboratory	1	.....	.....	2

Winter Quarter

B.A. 55	Elementary Accounting: Combined Course	4	4	.....	.....
E.E. 113	Electrical Engineering	3	3	.....	.....
E.E. 114	Electrical Engineering Laboratory	1	.....	.....	2
E.E. 117	Engineering Electronics	3	2	.....	2
M.&M. 127	Technical Mechanics: Dynamics	5	5	.....	.....

Spring Quarter

Econ. 161	Labor Problems and Trade Unionism	3	3	.....	.....
E.E. 115	Electrical Engineering	3	3	.....	.....
E.E. 116	Electrical Engineering Laboratory	1	.....	.....	2
E.E. 119	Engineering Electronics	3	2	.....	2
M.&M. 128	Strength of Materials	5	5	.....	.....

FOURTH YEAR*

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
B.A. 70	Statistics Survey	3	3	.....	.....
B.A. 77	Survey in Marketing	3	3	.....	.....
B.A. 142	Advanced Money and Banking.....	3	3	.....	.....
E.E. 121	Electrical Engineering	3	3	.....	.....
E.E. 122	Electrical Engineering Laboratory.....	2	.....	.....	4

Winter Quarter

B.A. 112	Business Statistics	3	3	.....	.....
B.A. 155	Corporation Finance	3	3	.....	.....
B.A. 167	Personnel Administration	3	3	.....	.....
E.E. 123	Electrical Engineering	3	3	.....	.....
E.E. 124	Electrical Engineering Laboratory.....	2	.....	.....	4

Spring Quarter

B.A. 58	Elements of Public Finance.....	3	3	.....	.....
B.A. 89	Production Management	3	3	.....	.....
B.A. 130	Cost Accounting Survey.....	3	3	.....	.....
E.E. 125	Electrical Engineering	3	3	.....	.....
E.E. 126	Electrical Engineering Laboratory.....	2	.....	.....	4

FIFTH YEAR

COMMUNICATION OPTION*

Fall Quarter

B.A. 71	Transportation: Services and Charges I.....	3	3	.....	.....
B.A. 139	Advanced General Accounting.....	3	3	.....	.....
B.A. 180G	Senior Topics: Production Management.....	3	3	.....	.....
E.E. 161	Radio Communication	3	.....	2	3
E.E. 164	Electric Communication	4	.....	2	4

Winter Quarter

B.A. 101	Advanced General Economics.....	3	3	.....	.....
B.A. 181G	Senior Topics: Production Management.....	3	3	.....	.....
Econ. 175	Government Regulation of Business.....	3	3	.....	.....
E.E. 162	Radio Communication	3	.....	2	3
E.E. 165	Electric Communication	4	.....	2	4

Spring Quarter

B.A. 102	Advanced General Economics.....	3	3	.....	.....
B.A. 182G	Senior Topics: Production Management.....	3	3	.....	.....
Econ. 149	Business Cycles	3	3	.....	.....
E.E. 100	Inspection Trip (spring vacation).....	2	.....	.....	.....
E.E. 163	Radio Communication	3	.....	2	3
E.E. 166	Electric Communication	4	.....	2	4

POWER OPTION

Fall Quarter

B.A. 71	Transportation: Services and Charges I.....	3	3	.....	.....
B.A. 101	Advanced General Economics	3	3	.....	.....
B.A. 139	Advanced General Accounting.....	3	3	.....	.....
B.A. 180G	Senior Topics: Production Management.....	3	3	.....	.....
E.E. 141	Central Stations	3	3	.....	.....
M.E. 40	Heat Engines	3	2	.....	3

* Students choosing the Communication Option must begin E.E. 64-65-66 in the fourth year.

Winter Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
B.A. 102	Advanced General Economics.....	3	3	.....	.....
B.A. 181G	Senior Topics: Production Management.....	3	3	.....	.....
Econ. 149	Business Cycles.....	3	3	.....	.....
E.E. 142	Electrical Transmission.....	3	3	.....	.....
M.E. 41	Heat Engines.....	3	2	.....	3

Spring Quarter

B.A. 182G	Senior Topics: Production Management.....	3	3	.....	.....
Econ. 175	Government Regulation of Business.....	3	3	.....	.....
E.E. 100	Inspection Trip (spring vacation).....	2	.....	.....	.....
E.E. 143	Valuation of Public Utilities Properties.....	3	3	.....	.....
M.E. 55	Internal Combustion Engines.....	3	2	.....	3

MECHANICAL ENGINEERING WITH BUSINESS ADMINISTRATION

SECOND YEAR

Fall Quarter

Econ. 8	General Economics.....	3	3	.....	.....
M.&M. 24	Calculus I: Differential.....	5	5	.....	.....
M.E. 9	Foundry Practice.....	2	.....	2	3
M.E. 20	Elementary Machine Design.....	2	.....	.....	6
M.E. 70	Mechanical Technology.....	1	.....	2	.....
Phys. 7	General Physics.....	5	1	4	2

Winter Quarter

Econ. 9	General Economics.....	3	3	.....	.....
M.&M. 25	Calculus II: Integral.....	5	5	.....	.....
M.E. 5	Pattern Practice.....	2	.....	2	3
M.E. 50	Auto and Airplane Engines.....	3	3	.....	.....
Phys. 8	General Physics.....	5	1	4	2

Spring Quarter

Econ. 28	Business Law.....	3	3	.....	.....
M.E. 13	Forging and Welding.....	2	.....	2	3
M.E. 21	Kinematics.....	2	.....	.....	6
M.&M. 26	Technical Mechanics: Statics.....	5	5	.....	.....
Phys. 9	General Physics.....	5	1	4	2

THIRD YEAR

Fall Quarter

B.A. 54	Elementary Accounting: Combined Course.....	4	4	.....	.....
M.&M. 127	Technical Mechanics: Dynamics.....	5	5	.....	.....
M.E. 22	Mechanism.....	3	3	.....	.....
M.E. 33	Elementary Mechanical Laboratory.....	2	.....	1	3
M.E. 71	Machine Shop Practice.....	2	.....	2	3
M.E. 131	Thermodynamics.....	3	3	.....	2

Winter Quarter

B.A. 55	Elementary Accounting: Combined Course.....	4	4	.....	.....
M.&M. 128	Strength of Materials.....	5	5	.....	.....
M.E. 23	Dynamics of Machine Design.....	3	.....	.....	6
M.E. 34	Mechanical Laboratory.....	2	.....	1	3
M.E. 72	Machine Shop Practice.....	2	.....	2	3
M.E. 132	Thermodynamics.....	3	3	.....	.....

Spring Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
B.A. 58	Elements of Public Finance	3	3	.....	.....
M.&M. 129	Hydraulics	4	3	1	.....
M.&M. 141	Materials Laboratory	2	.....	1	2
M.&M. 143	Hydraulics Laboratory	1	.....	.....	2
M.E. 24	Elements of Machine Design	3	2	.....	3
M.E. 35	Elementary Steam and Power Laboratory	2	.....	1	3
M.E. 141	Heat-Power Engineering	3	3	.....	.....

FOURTH YEAR

Fall Quarter

B.A. 70	Statistics Survey	3	3	.....	.....
B.A. 89§	Production Management	3	3	.....	.....
B.A. 180C	Senior Topics: Marketing	3	3	.....	.....
M.E. 121	General Engineering Design	2	.....	.....	6
M.E. 142 or	Heat-Power Engineering	3	3	.....	.....
M.E. 150	Internal Combustion Engines	3	3	.....	.....
M.E. 171§	Production Control	3	3	.....	.....
M.E. 160	Heating and Ventilation	3	1	2	.....
M.E. 159† or	Internal Combustion Engine Laboratory	2	.....	.....	4
M.E. 169† or	Heating and Ventilation Laboratory	2	.....	.....	4
M.E. 174†	Motion and Time Study Laboratory	2	.....	1	3

Winter Quarter

B.A. 77	Survey in Marketing	3	3	.....	.....
B.A. 112	Business Statistics	3	3	.....	.....
Econ. 161	Labor Problems and Trade Unionism	3	3	.....	.....
Engr. 37	Technical Discussions	3	3	.....	.....
M.E. 122* or	Mechanical Engineering Design	2	.....	.....	6
M.E. 147*	Design of Steam Machinery	2	.....	.....	6
M.E. 142 or	Heat-Power Engineering	3	3	.....	.....
M.E. 150	Internal Combustion Engines	3	3	.....	.....
M.E. 149† or	Advanced Steam Laboratory	2	.....	.....	4
M.E. 159† or	Internal Combustion Engine Laboratory	2	.....	.....	4
M.E. 169† or	Heating and Ventilation Laboratory	2	.....	.....	4
M.E. 174†	Motion and Time Study Laboratory	2	.....	1	3

Spring Quarter

B.A. 71	Transportation: Services and Charges I	3	3	.....	.....
B.A. 130	Cost Accounting Survey	3	3	.....	.....
B.A. 155	Corporation Finance	3	3	.....	.....
Econ. 175	Government Regulation of Business	3	3	.....	.....
G.E. 193	Engineering Practice	2	1	1	.....
M.E. 123* or	Mechanical Engineering Design	2	.....	.....	6
M.E. 148*	Design of Power Plant Units	2	.....	.....	6
M.E. 149† or	Advanced Steam Laboratory	2	.....	.....	4
M.E. 159† or	Internal Combustion Engine Laboratory	2	.....	.....	4
M.E. 169† or	Heating and Ventilation Laboratory	2	.....	.....	4
M.E. 174†	Motion and Time Study Laboratory	2	.....	1	3

* Students electing Mechanical Engineering Design or Design of Steam Machinery can program these courses in this year only. Those wishing to elect Internal Combustion Engines or Heating and Ventilation Design can program them in the fifth year.

† Three of the four laboratories are required. One each of these laboratories will program in the fall, winter, and spring quarters of the fourth year and in the fall quarter of the fifth year.

§ Mechanical engineers take either M. E. 171, Production Control, or B. A. 89, Production Management, and substitute some approved 3-credit business course, preferably B. A. 180C. Credit will not be given for both B. A. 89 and M. E. 171.

FIFTH YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
B.A. 101	Advanced General Economics.....	3	3	.....	.....
B.A. 139	Advanced General Accounting.....	3	3	.....	.....
B.A. 167	Personnel Administration.....	3	3	.....	.....
B.A. 180G	Senior Topics: Production Management.....	3	3	.....	.....
E.E. 36	Electric Power.....	3	2	.....	2
M.E. 149† or	Advanced Steam Laboratory.....	2	.....	.....	4
M.E. 159† or	Internal Combustion Engine Laboratory.....	2	.....	.....	4
M.E. 169† or	Heating and Ventilation Laboratory.....	2	.....	.....	4
M.E. 174†	Motion and Time Study Laboratory.....	2	.....	.....	4
M.E. 190	Seminar.....	1	1	.....	.....

Winter Quarter

B.A. 102	Advanced General Economics.....	3	3	.....	.....
B.A. 142	Advanced Money and Banking.....	3	3	.....	.....
B.A. 181G	Senior Topics: Production Management.....	3	3	.....	.....
E.E. 37	Electric Power.....	3	2	.....	2
M.E. 156 or	Design of Internal Combustion Engines.....	2	.....	.....	6
M.E. 161	Heating, Ventilation and Air Conditioning.....	2	.....	.....	6
M.E. 191	Seminar.....	1	1	.....	.....

Spring Quarter

B.A. 182G	Senior Topics: Production Management.....	3	3	.....	.....
Econ. 149	Business Cycles.....	3	3	.....	.....
E.E. 38	Electric Power.....	3	2	.....	2
M.E. 157 or	Design of Internal Combustion Engines.....	2	.....	.....	6
M.E. 162	Heating, Ventilation and Air Conditioning.....	2	.....	.....	6
M.E. 192	Seminar.....	1	1	.....	.....
M.E. 195	Inspection Trip (spring vacation).....	1	.....	.....	.....

ENGINEERING PREBUSINESS

(Four-year course in Engineering and Business Administration)

This course has been arranged for students who wish to prepare for positions in industry for which basic technical training is necessary, with instruction in business administration. Such positions are found in fields of purchasing, sales and sales promotion, cost accounting, employment and rate setting, and production control.

Upon the completion of two years of prescribed work in the Institute of Technology the student transfers to the School of Business Administration, where the third and fourth years are taken. Students in this program *must* transfer their enrolment to the School of Business Administration at the *beginning* of their junior year. The combined course leads to the degree of bachelor of business administration.

For freshman year, see page 16.

† Three of the four laboratories are required. One each of these laboratories will program in the fall, winter, and spring quarters of the fourth year and in the fall quarter of the fifth year.

SOPHOMORE YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
M.&M. 91†	Calculus	4	4	.....	.....
Phys. 7	General Physics	5	1	4	2
Econ. 8	General Economics	3	.....	3	.....
M.E. 17	Machine Shop Practice	2	.....	2	3
M.E. 70	Mechanical Technology	1	.....	2	.....
	Electives*				

Winter Quarter

Econ. 3	Elements of Money and Banking.....	5	3	2	.....
Econ. 9	General Economics	3	3	.....	.....
Econ. 20‡	Elements of Accounting.....	3	3	.....	.....
Phys. 8	General Physics	5	1	4	2
	Electives*				

Spring Quarter

M.&M. 84†	Technical Mechanics	5	5	.....	.....
Phys. 9	General Physics	5	1	4	2
Econ. 5	Elements of Statistics.....	5	5	.....	.....
Econ. 25	Principles of Accounting.....	3	3	.....	.....

JUNIOR YEAR§

(In the School of Business Administration)

	Credits
Strength of Materials (M.&M. 85f)†.....	3
Materials Testing Laboratory (M.&M. 87f)†.....	1
Principles of Accounting (Econ. 26f,w,s).....	3
Business Law (Bus.Adm. 51f-52w-53s).....	3
Business Statistics (Bus.Adm. 112f,w,s).....	3
Corporation Finance (Bus.Adm. 155f,w,s).....	3
Advanced Money and Banking (Bus.Adm. 142f,w,s).....	3
Transportation: Services and Charges I (Bus.Adm. 71f,w,s).....	3
Survey in Marketing (Bus.Adm. 77f,w,s).....	3
Production Management (Bus.Adm. 89f,w,s).....	3
Advanced General Accounting (Bus.Adm. 139f,w,s).....	3
Tabulating Equipment Laboratory (Bus.Adm. 91f,w,s).....	1
Electives (See list, page 54).....	4

SENIOR YEAR§

(In the School of Business Administration)

	Credits
Transportation: Services and Charges II (Bus.Adm. 72w,s).....	3
Cost Accounting Survey (Bus.Adm. 130f,s).....	3
Advanced General Economics (Bus.Adm. 101f,w,s-102f,w,s).....	6
Business Cycles (Econ. 149f,w,s).....	3
Labor Problems and Trade Unionism (Econ. 161f,w,s).....	3
Personnel Administration (Bus.Adm. 167f,w).....	3
Elements of Public Finance (Bus.Adm. 58f,w,s).....	3
Government Regulation of Business (Econ. 175f,w,s).....	3
Senior Topics: Production Management (Bus.Adm. 180-181-182G).....	9
Electives (See page 54).....	12

* For list of elective courses in other colleges, see page 68.

† For permissible substitute, see Institute of Technology, Description of Courses and Schedule of Classes, page 71.

§ In addition to the required courses in the junior and senior years, the student must earn approximately 10 credits per year.

¶ Students who have had a high school course or experience in bookkeeping may be exempt from this course and admitted to Econ. 25 by passing a placement test.

RECOMMENDED ELECTIVES

	Hours
Economic History (Hist. 80f-81w-82s).....	9
Finance Management (Bus.Adm. 156f).....	3
Theory of Statistics (Econ. 121f-122w-123s).....	9
Geography of Commercial Production (Geog. 41f,w,s).....	5
Fire and Marine Insurance (Bus.Adm. 60w).....	3
Casualty Insurance (Bus.Adm. 61s).....	3
Senior Topics: Marketing (Bus.Adm. 180C).....	3
Contracts and Specifications (G.E. 101f,w).....	3
General Psychology (Psy. 1f-2w).....	6
Vocational Psychology (Psy. 130s).....	3

GEOPHYSICS

The institute has established a curriculum for students interested in geophysics.

It is suggested that any student who desires to enter such a curriculum arrange his programs to include the following courses :

English	Physics
Drawing	General Physics 7-8-9
Chemistry	Intermediate Physics 100-102-104
Mathematics	Theoretical Physics 101-103-105
Algebra, Trigonometry, and Analytics	Modern Experimental Physics 110-112 (individual work)
Differential and Integral Calculus	Experimental Optics 134
Differential Equations	Geophysics
Advanced Calculus	Principles of Geophysical Prospecting 161-162
Technical Mechanics (Statics and Dynamics)	Elective
Geology	Paleontology 51
General and Historical 1-2, A-B	Economic Geology 110
Mineralogy 23-24	Ore Deposits 111
Sedimentation 101	Advanced General Geology 151-152-153
Rock Study 105	Field Work 85
Geology of Petroleum 112	Mining
Structural Geology 125	Mining 131
Map Interpretation 144-145	Civil Engineering
Field Work 85	Surveying 11-12-13
Elective topics in Mathematical Analysis	
144-145-146	

MECHANICAL ENGINEERING

Four-year course leading to the degree of bachelor of mechanical engineering, B.M.E.

In addition to the prescribed courses, sufficient electives must be taken to complete a total of at least 207 credits for graduation.

The field of mechanical engineering is very broad. Graduates hold positions in technical or nontechnical work in almost every kind of industry.

The profession includes the following major divisions: design of machinery and apparatus for all purposes; production and manufacturing methods; operation of industrial plants; steam power generation, internal combustion engines; heating, ventilation, refrigeration, and air conditioning; mechanical research and development; sales engineering; and the general field of management.

The course is planned to give broad training rather than highly specialized work. A reasonable amount of time is allowed for nontechnical subjects. A course in speech is required.

It is recommended that students in Mechanical Engineering spend their summer vacations in industry if possible.

For freshman year, see page 16.

SOPHOMORE YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
M.&M. 24	Calculus I: Differential.....	5	5	.....	.....
Phys. 7	General Physics	5	1	4	2
M.E. 9	Foundry Practice	2	.....	2	3
M.E. 20	Elementary Machine Design.....	2	.....	.....	6
M.E. 70	Mechanical Technology	1	.....	2	.....
Engl. 37† or	Technical Discussions	3	3	.....	.....
M.E. 50†	Auto and Airplane Engines.....	3	3	.....	.....
	Electives*				

Winter Quarter

M.&M. 25	Calculus II: Integral.....	5	5	.....	.....
Phys. 8	General Physics	5	1	4	2
M.E. 5	Pattern Practice	2	.....	2	3
Engl. 37† or	Technical Discussions	3	3	.....	.....
M.E. 50†	Auto and Airplane Engines.....	3	3	.....	.....
	Electives*				

Spring Quarter

M.&M. 26	Technical Mechanics: Statics.....	5	5	.....	.....
Phys. 9	General Physics	5	1	4	2
M.E. 13	Forging, Welding and Heat Treating.....	2	.....	2	3
M.E. 21	Kinematics	2	.....	.....	6
Engl. 37† or	Technical Discussions	3	3	.....	.....
M.E. 50†	Auto and Airplane Engines.....	3	3	.....	.....
	Electives*				

JUNIOR YEAR

Fall Quarter

M.&M. 127	Technical Mechanics: Dynamics.....	5	5	.....	.....
M.E. 22	Mechanism	3	3	.....	.....
M.E. 33	Elementary Mechanical Laboratory.....	2	.....	1	3
M.E. 71	Machine Shop Practice	2	.....	2	3
M.E. 131	Thermodynamics	3	3	.....	2
	Electives*				

Winter Quarter

M.&M. 128	Strength of Materials	5	5	.....	.....
M.&M. 141	Materials Laboratory	2	.....	1	2
M.E. 23	Machine Design	3	.....	1	6
M.E. 34	Mechanical Laboratory	2	.....	1	3
M.E. 72	Machine Shop	2	.....	2	3
M.E. 132	Thermodynamics	3	3	.....	.....
	Electives*				

Spring Quarter

M.&M. 129	Hydraulics	4	3	1	.....
M.&M. 143	Hydraulics Laboratory	1	.....	.....	2
M.E. 24	Machine Design	3	2	.....	3
M.E. 35	Elementary Steam and Power Laboratory.....	2	.....	1	3
M.E. 141	Heat-Power Engineering	3	3	.....	.....
	Electives*				

* For list of elective courses in other colleges, see page 68.

† Engl. 37 and M.E. 50 are offered each quarter. Both courses must be completed during the year. Enrolment in Engl. 37 is limited to 25 students.

SENIOR YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
M.E. 121	General Engineering Design.....	2	.....	.....	6
M.E. 142§	Heat-Power Engineering	3	3	.....	.....
M.E. 150§	Internal Combustion Engines.....	3	3	.....	.....
M.E. 171§	Production Control	3	3	.....	.....
	Senior Laboratory†	2	.....	.....	4
M.E. 160	Heating and Ventilation.....	3	2	1	.....
M.E. 190	Seminar	1	1	.....	.....
E.E. 36	Electric Power	3	2	.....	2
	Electives*				

Winter Quarter

M.E. 142§	Heat-Power Engineering	3	3	.....	.....
M.E. 150§	Internal Combustion Engines.....	3	3	.....	.....
M.E. 171§	Production Control	3	3	.....	.....
	Senior Laboratory†	2	.....	.....	4
M.E. 191	Seminar	1	1	.....	.....
	Engineering Design¶	2	.....	.....	6
E.E. 37	Electric Power	3	2	.....	2
	Electives*				

Spring Quarter

M.E. 192	Seminar	1	.....	1	1
	Engineering Design¶	2	.....	.....	6
M.E. 195	Inspection Trip (spring vacation).....	1	.....	.....	.....
E.E. 38	Electric Power	3	2	.....	2
G.E. 193	Engineering Practice	2	.....	2	.....
	Senior Laboratory†	2	.....	.....	4
	Electives*				

In addition to the regular four-year course in Mechanical Engineering, those who are qualified are urged to take a fifth year, that is, a year of graduate study. This year's work may lead to the Master's degree in mechanical engineering and also satisfy the requirement of graduate study towards the professional degree of mechanical engineer. (For detailed information as to procedure consult the Graduate School Bulletin.)

GEOLOGICAL, MINING, PETROLEUM, AND METALLURGICAL ENGINEERING

(For students entering with chemistry, higher algebra, and solid geometry and who pass their English test.)

* For list of elective courses in other colleges, see page 68.

† Three of the four laboratory courses, M.E. 149, 159, 169, 174, must be taken in the three quarters and not more than two in any one quarter.

§ Courses M.E. 142, 150, 171 must be taken in the fall and winter quarters. Each course is offered both quarters.

¶ The following courses are accepted for this requirement: M.E. 122w-123s, Mechanical Engineering Design; M.E. 147w, Design of Steam Machinery; M.E. 148s, Design of Power Plant Units; M.E. 156w, 157s, Design of Internal Combustion Engines; M.E. 161w, 162s, Heating and Ventilation Design; M.E. 170s, Tool Design and Construction; M.E. 172w, Industrial Plant Design; C.E. 37f, Structural Engineering.

FRESHMAN YEARS

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
M.&M. 11	College Algebra	5	5	.....	.....
Inorg.Chem. 4	General Inorganic Chemistry	4	1	3	3
Engl. 4	Composition	3	3	.....	.....
Draw. 11	Engineering Drawing	2	.....	.....	6
Geol. 11	Dynamic Geology	2	2	.....	1

Winter Quarter

M.&M. 12	Trigonometry	5	5	.....	.....
Inorg.Chem. 5	General Inorganic Chemistry	4	1	3	3
Engl. 5	Composition	3	3	.....	.....
Draw. 12	Engineering Drawing	2	.....	.....	6
Geol. 12	Dynamic and Historical Geology	2	2	.....	.....

Spring Quarter

M.&M. 13	Analytic Geometry	5	5	.....	.....
Inorg.Chem. 16	Qualitative Chemical Analysis	5	.....	3	6
Engl. 6	Composition	3	3	.....	.....
Draw. 13	Topographic Drawing	2	.....	.....	6
Geol. 13	Historical Geology	2	2	.....	.....

GEOLOGICAL, MINING, AND PETROLEUM ENGINEERING

Candidates for either of these degrees need not choose the field of specialization until the beginning of the junior year.

SOPHOMORE YEAR

Fall Quarter

Geol. 23	Mineralogy	4	1	3	4
M.&M. 31	Calculus	3	3	.....	.....
Met. 1	Assaying	2	.....	3	.....
Met. 3	Assaying Laboratory	1	.....	.....	4
Min. 11	Surveying	3	1	3	.....
Phys. 7	General Physics	5	1	4	2

Winter Quarter

Anal.Chem. 9	Quantitative Analysis	3	1	1	6
Geol. 24	Mineralogy	4	1	3	4
M.&M. 32	Calculus	3	3	.....	.....
Min. 12	Surveying	3	1	3	.....
Phys. 8	General Physics	5	1	4	2

Spring Quarter

Geol. 105	Rock Study	2	.....	2	2
M.&M. 33	Calculus	3	3	.....	.....
Met. 13	General Ferrous Metallurgy	2	.....	3	.....
Min. 13	Mine Surveying	2	1	2	.....
Min. 14	Surveying Field Work	5	.....	.....	20
Min. 120	First Aid (1 week, 3 hours per day).....	0	.....	.....	.....
Phys. 9	General Physics	5	1	4	2

Summer Field Trips

Min. 15	Field work in surveying on the iron ranges of Minnesota	8			
Geol. 100	Field work in geology on the iron ranges of Minnesota	3			

§ See statement on page 15 for students entering without chemistry, higher algebra, or solid geometry and those required to take the course in Preparatory English.

GEOLOGICAL ENGINEERING

Four-year course leading to the degree of bachelor of geological engineering, B.Geol.E. Requirements for graduation cover all prescribed courses including summer field trips and electives, making a total of 233 credits.

The course in Geological Engineering is designed to prepare students for responsible positions in geological departments of exploration, oil, or mining companies, or to engage in consulting geological practice.

There are in existence many ore deposits which are economically of no particular value at the present time, either because the cost of mining is excessive or because there is no known method of separating minerals in the mineral aggregate forming the ore at a cost which will result in a profit for the operator. In addition to thoro courses in geology, the mining geologist must, therefore, be familiar with the various methods of mining and know something of the possibilities of ore dressing to recover the valuable minerals. A knowledge of the fundamental principles of the smelting and refining of metals is a decided asset in his work.

The basic training must, therefore, include thoro courses in mathematics, drafting, chemistry, and physics. It must also include plane and mine surveying, mapping, both topographic and geological, assaying, ore dressing, and the principles of metallurgy. The technical work in mining includes exploration, development, and mining methods together with the courses in mine administration, economics of mining, and mining law. The general course in geology is given in the freshman year. Then follow the courses in mineralogy, rock study, and petrography. These are followed by advanced general geology, structural and metamorphic geology, index fossils and paleontology, mineralography, sedimentation, ore deposits, oil geology. Advanced courses in petrology and petrography, blowpipe analysis, and map interpretation are also available.

The Department of Geology is well supplied with working collections of minerals, crystal models, rocks, thin sections, ores and economic minerals, fossils, and other illustrative material used in connection with the courses in paleontology, stratigraphy, and historical geology. The department has large, well-lighted, and fully equipped laboratories for the basic courses of mineralogy, rock study, and petrology. Special equipment is available for studies in sedimentation, rock analysis, and X-ray studies of minerals. Courses in geology and mineralogy extend throughout the four years.

JUNIOR YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Geol. 106	Petrography	2	.....	2	2
Geol. 144	Interpretation of Geologic Maps	4	.....	.....	8
Geol. 151	Advanced General Geology	3	.....	3	.....
M.&M. 26	Technical Mechanics: Statics	5	5	.....	.....
Min. 106	Mine Mapping	2	.....	.....	8
Min. 111	Exploration	3	.....	4	.....

Winter Quarter

Draw. 14	Descriptive Geometry	4	.....	3	3
Geol. 124	Metamorphic Geology	3	.....	3	.....
Geol. 131	Advanced Petrology	4	1	3	4
Geol. 145	Interpretation of Geologic Maps	2	.....	.....	4
Geol. 152	Advanced General Geology	3	.....	3	.....
Min. 112	Exploration and Development	3	.....	4	.....

Spring Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Geol. 125	Structural Geology	3	.....	3	.....
Geol. 132	Advanced Petrology	4	1	3	4
Geol. 153	Advanced General Geology	3	.....	3	.....
M.&M. 127	Technical Mechanics: Dynamics	5	5	.....	.....
Min. 113	Development and Exploitation	3	.....	4	.....

Summer Field Trip

Geol. 150	Field Geology. Detailed systematic work conforming with standards of official surveys. Preparation of geologic maps, structure sections, reports; paragenesis of ores and their relations to geologic structures. Field, Black Hills, South Dakota	6
-----------	--	---	-------	-------	-------

SENIOR YEAR

Fall Quarter

Geol. 61	Blowpipe Analysis	3	.....	2	4
Geol. 91	Index Fossils of North America	3	.....	1	4
Geol. 101	Sedimentation	3	.....	3	.....
Geol. 110	Economic Geology	3	.....	3	.....
Met. 106	Base Metals	2	.....	3	.....
Met. 110	Ore Dressing	2	.....	3	.....
Min. 141	Reports and Administration	3	.....	4	.....

Winter Quarter

Geol. 92	Index Fossils of North America	3	.....	1	4
Geol. 111	Ore Deposits	3	.....	3	.....
Geol. 140	Applied Petrography	3	.....	1	4
Geol. 166	Mineralography	3	.....	.....	6
Met. 107	Base Metals	2	.....	2	.....
Met. 112	Ore Dressing	2	.....	3	.....
Min. 142	Coal Mining	3	.....	4	.....

Spring Quarter

Geol. 93	Index Fossils of North America	3	.....	1	4
Geol. 112	Geology of Petroleum	3	.....	3	.....
Geol. 141	Applied Petrography	3	.....	1	4
Geol. 167	Mineralography	3	.....	.....	6
Met. 108	Precious Metals	2	.....	3	.....
Met. 116	Ore Dressing Laboratory	1	.....	.....	4
Min. 143	Mining Law, Quarries, and Placers	3	.....	4	.....

MINING ENGINEERING

Four-year course leading to the degree of bachelor of mining engineering, B.Min.E. Requirements for graduation cover all prescribed courses including summer field trips and electives, making a total of 235 credits.

The course in Mining is designed to prepare the student for responsible positions in the field of mining. In such positions a mining engineer, in addition to meeting the technical problems involved in the development and operation of a mine, must be able to pass upon proposals and specifications for structures and for mechanical and electrical equipment. In addition he must be familiar with the fundamental principles of ore dressing and ore testing, as in the early stages of development he must be able to determine whether or not separation of the minerals in the mineral aggregate forming the ore may be made at a cost which will leave a profit to the company.

The basic training must, therefore, include thoro courses in mathematics, drafting, chemistry, physics, and geology including the identification of minerals and rocks. It must

also include plane and mine surveying, mapping, assaying, ore dressing, and ore testing. The mechanical and electrical features of the various types of machinery used in the industry must be understood. Tho it is not necessary for the mining engineer to concern himself with problems of the design of individual machines, he must be familiar with the essential characteristics in order to consider intelligently proposals and specifications. Essential to his training is a thoro knowledge of mine exploration and development, mining methods as influenced by the type of deposits, as well as the applications of economics to mining. He must have a reasonable familiarity with the basic mining laws of the various states and the laws governing corporations, etc.

The Department of Mining is well supplied with samples of the smaller mine equipment, models, drawings, photographs, lantern slides, and mine maps. The lectures treat of prospecting, development, support of excavations, mining methods, mine administration, mining law, safety and safety regulations, and the necessary allied subjects. The courses in mining extend through the sophomore, junior, and senior years.

JUNIOR YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Geol. 106	Petrography	2	.....	2	2
M.&M. 26	Technical Mechanics: Statics	5	5	.....	.....
Met. 106	Base Metals	2	.....	3	.....
Met. 110	Ore Dressing	2	.....	3	.....
Min. 106	Mine Mapping	2	.....	.....	8
Min. 111	Exploration	3	.....	4	.....
Min. 121	Mine Plant	3	.....	5	.....

Winter Quarter

Draw. 14	Descriptive Geometry	4	.....	3	3
M.&M. 128	Strength of Materials.....	5	5	.....	.....
Met. 107	Base Metals	2	.....	3	.....
Met. 112	Ore Dressing	2	.....	3	.....
Min. 112	Exploration and Development	3	.....	4	.....
Min. 122	Mine Plant	3	.....	5	.....

Spring Quarter

E.E. 41	Electric Power	3	.....	2	3
M.&M. 127	Technical Mechanics: Dynamics	5	5	.....	.....
Met. 108	Precious Metals	2	.....	3	.....
Met. 116	Ore Dressing Laboratory.....	1	.....	.....	4
Min. 113	Development and Exploitation	3	.....	4	.....
Min. 123	Mine Plant	3	.....	5	.....
Min. 130	Mine Rescue (1 week, 3 hours per day)	0	.....	.....	.....
	Electives	2	.....	.....	.....

Summer Field Trip

Min. 139	Study of mining operations, mine plants, and metallurgical plants in one or more western mining camps	6
----------	---	---	-------	-------	-------

SENIOR YEAR

Fall Quarter

Geol. 110	Economic Geology	3	.....	3	.....
M.E. 9	Foundry Practice	2	.....	2	3
Met. 121	Ore Testing	2	.....	1	3
Min. 124	Mining Hydraulics	4	.....	5	.....
Min. 126	Engineering Construction	3	.....	.....	8
Min. 141	Reports and Administration	3	.....	4	.....
	Electives	2	.....	.....	.....

Winter Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Geol. 111	Ore Deposits	3	.....	3	.....
M.E. 13	Forging, Welding and Heat Treating.....	2	.....	2	3
M.E. 138	General Laboratory	2	.....	.....	4
Met. 156	Metallography	3	.....	2	3
Min. 127	Engineering Construction	3	.....	.....	8
Min. 142	Coal Mining	3	.....	4	.....
Min. 144	Advanced Mining	3	.....	.....	8

Spring Quarter

Geol. 112	Petroleum Geology	3	.....	3	.....
Geol. 125	Structural Geology	3	.....	3	.....
M.E. 16	Machine Shop Practice.....	2	.....	2	3
Met. 126	Special Problems in Metallurgy.....	3	2	.....	4
Min. 143	Mining Law, Quarries, and Placers.....	3	.....	4	.....
Min. 145	Advanced Mining	3	.....	.....	8
	Electives	2	.....	.....	.....

PETROLEUM ENGINEERING

Four-year course leading to the degree of bachelor of petroleum engineering, B.Pet.E.

Requirements for graduation cover all prescribed courses, including summer field trips and electives, making a total of 235 credits.

The course in Petroleum Engineering is designed to prepare the student for responsible positions in the field of petroleum production. In such a position the petroleum engineer must be familiar with geology and in particular with oil geology. This involves a knowledge of the various geological ages during which oil was formed, of the geological conditions under which the oil was collected in pools, and the methods of interpreting geological data to determine whether or not a given locality may contain such pools. He must know the methods of drilling and the difficulties which must be overcome in this work. He must know the principles of pumping, with both gas lift and mechanical pumps, and the methods of gasoline recovery to be used in connection with these methods. He must know the causes of the formation of emulsions and methods of breaking them when formed. He must be familiar with the laws of flow of viscous fluids and be able to design pipe lines, pumping stations, and storage basins. In addition, he should know the essential economic principles involved in the industry, and be familiar with the forms, contracts, and other documents usual in the industry.

The basic training must, therefore, include thoro courses in mathematics, drafting, chemistry, physics, and geology, including in particular, a thoro familiarity with sedimentary deposits. It must also include surveying and mapping. The mechanical and electrical features of the various types of machinery used in the industry must be understood. A course in pipe lines gives the necessary preparation in flow formulas, soil, corrosion, and methods of prevention. Thoro courses are included in prospecting, oil field mapping, production technology, and petroleum economics. Due emphasis is also placed on problems of administration, including reports, leases, contracts, and specifications.

The department is well supplied with samples of the smaller oil field equipment, well logs, drill cores, models, maps, photographs, lantern slides, and samples of petroleum products. The lectures treat of location, prospecting, development, production, refining methods, distribution, administration, leasing, mineral laws, safety work and safety regulations, and allied subjects affecting oil and gas production. Laboratory work includes special problems in oil and gas production. The courses in petroleum engineering subjects extend through the junior and senior years.

INSTITUTE OF TECHNOLOGY

JUNIOR YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Geol. 106	Petrography	2	.....	2	2
Geol. 144	Interpretation of Geologic Maps	3	.....	.....	6
Geol. 151	Advanced General Geology	3	.....	3	.....
M.&M. 26	Technical Mechanics: Statics	5	5	.....	.....
Min. 121	Mine Plant	3	.....	5	.....
Pet.E. 111	Oil Field Development	3	.....	4	.....

Winter Quarter

Geol. 131	Advanced Petrology	4	1	3	4
Geol. 152	Advanced General Geology	3	.....	3	.....
M.&M. 128	Strength of Materials	5	5	.....	.....
Min. 107	Mine Maps	1	.....	.....	3
Min. 122	Mine Plant	3	.....	5	.....
Pet.E. 112	Oil Field Production	3	.....	4	.....

Spring Quarter

Geol. 112	Petroleum Geology	3	.....	3	.....
Geol. 125	Structural Geology	3	.....	3	.....
M.&M. 127	Technical Mechanics: Dynamics	5	5	.....	.....
Pet.E. 131	Petroleum Refining	2	.....	2	.....
Pet.E. 134	Petroleum Plant	2	.....	3	.....
Pet.E. 138	Oil Field Mapping	2	.....	.....	6
Min. 130	Mine Rescue (1 week, 3 hours per day)	0	.....	.....	.....
	Electives	2	.....	.....	.....

Summer Field Trip

Pet.E. 135	Study of oil well drilling and production methods and refining practice in one or more oil fields	6
------------	---	---	-------	-------	-------

SENIOR YEAR

Fall Quarter

Geol. 101	Sedimentation	3	.....	3	.....
Geol. 110	Economic Geology	3	.....	3	.....
Min. 124	Mining Hydraulics	4	.....	5	.....
Min. 126	Engineering Construction	3	.....	.....	8
Min. 141	Reports and Administration	3	.....	4	.....
Pet.E. 152	Petroleum Production Technology	3	.....	1	6

Winter Quarter

Geol. 111	Ore Deposits	3	.....	3	.....
M.E. 13	Forging, Welding and Heat Treating	2	.....	2	3
Met. 156	Metallography	3	.....	2	3
Min. 127	Engineering Construction	3	.....	.....	8
Pet.E. 144	Advanced Petroleum Engineering	5	.....	4	6
Pet.E. 153	Petroleum Production Technology	3	.....	1	6

Spring Quarter

Geol. 153	Advanced General Geology	3	.....	3	.....
M.E. 16	Machine Shop Practice	2	.....	2	3
Pet.E. 145	Advanced Petroleum Engineering	5	.....	4	6
Pet.E. 154	Petroleum Production Technology	3	.....	1	6
	Electives	6	.....	.....	.....

METALLURGICAL ENGINEERING

Four-year course leading to the degree of bachelor of metallurgical engineering, B.Met.E.

Requirements for graduation cover all prescribed courses including summer field trips and electives, making a total of 222 credits.

Courses in metallurgy are designed to prepare the student for responsible positions in metallurgical industries. The instruction deals with the production and uses of ferrous, nonferrous, and precious metals. Metallurgists are concerned with the preparation of raw materials for smelting, the design and operation of furnaces to convert ores into metals, and the structure and physical properties of metals and alloys.

Representative ores of all the important metals, models and drawings of furnaces, and samples of furnace products are available. Lectures cover the construction and operation of ore dressing and concentrating machinery, together with typical combinations of ore dressing machines. The sequence of physical and chemical changes occurring during smelting, furnace design, fuels, refractories, methods, and efficiency of heat application and control over quality of product are stressed in courses dealing with metallurgical processes.

Laboratories equipped with various types of furnaces are provided so that the students can become familiar with high temperature equipment and conduct experiments demonstrating important features of metallurgical processes.

Metallography is an important branch of metallurgy dealing with the application of metals and alloys. The work relates to internal structures, as studied by the microscope, and to the physical and chemical properties of metals and alloys. A knowledge of metallography is essential in the design and development of new machines and equipment fabricated from metals.

An elaborate and up-to-date file of references and abstracts is available. A large collection of specimens, photomicrographs, and lantern slides covering all types of steels, brasses, bronzes, aluminum alloys, and other industrial alloys is available for study and comparison.

Laboratory courses accompany lecture work. The metallographic laboratory is equipped with the most up-to-date microscopes and apparatus for heat treating and physical and mechanical testing. Practice is obtained in taking photomicrographs.

Two options are open to students in metallurgy. Option A is provided for students specializing in ore dressing and the refining and smelting of nonferrous metals. Option B is for students interested in the production of ferrous metals and the application of all metals.

Students will register for either Option A or Option B at the beginning of the junior year.

SOPHOMORE YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Geol. 23	Mineralogy	4	1	3	4
M.&M. 31	Calculus	3	3	.....	.....
Met. 1	Assaying	2	.....	3	.....
Met. 2	Assaying Laboratory	3	.....	.....	8
Phys. 7	General Physics	5	1	4	2

Winter Quarter

Anal.Chem. 9	Quantitative Analysis	3	1	1	6
Geol. 24	Mineralogy	4	1	3	4
M.&M. 32	Calculus	3	3	.....	.....
Met. 11	Metallurgy of Pig Iron	3	1	3	.....
Phys. 8	General Physics	5	1	4	2

Spring Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Geol. 105	Rock Study	2		2	2
M.&M. 33	Calculus	3	3		
Met. 12	Metallurgy of Steel	3	1	3	
Min. 120	First Aid				
Phys. 9	General Physics	5	1	4	2
	Electives	5			

JUNIOR YEAR

(Students will register for either Option A or Option B.)

Fall Quarter

Option Course No.	Title	Credits	Rec.	Lect.	Lab.
A&B M.&M. 26	Technical Mechanics: Statics	5	5		
A&B Met. 106	Base Metals	2		3	
A&B Met. 110	Ore Dressing	2		3	
A&B Met. 111	Ore Dressing Laboratory	1			4
A&B Min. 121	Mine Plant	3		5	
A Geol. 106	Petrography	2		2	2
A Geol. 165	Ore Dressing Microscopy	1			3
A Min. 111	Exploration	3		4	
B M.E. 9	Foundry Practice	2		2	3
B Met. 153	Metallography	4		3	4

Winter Quarter

A&B M.&M. 128	Strength of Materials	5	5		
A&B Met. 107	Base Metals	2		3	
A&B Met. 133	Electrometallurgy	3		3	3
A&B Min. 122	Mine Plant	3		5	
A Met. 112	Ore Dressing	2		3	
A Met. 113	Ore Dressing Laboratory	1			4
A Min. 112	Exploration and Development	3		4	
B M.E. 13	Forging, Welding and Heat Treating	2		2	3
B Met. 154	Metallography	4		3	4

Spring Quarter

A&B E.E. 41	Electric Power	3		2	3
A&B M.&M. 127	Technical Mechanics: Dynamics	5	5		
A&B Met. 108	Precious Metals	2		3	
A&B	Electives	3			
A Met. 114	Ore Dressing	2		3	
A Met. 115	Ore Dressing Laboratory	1			4
A Min. 113	Development and Production	3		4	
B M.E. 16	Machine Shop Practice	2		2	3
B Met. 155	Metallography	4		3	4

Summer Field Trips

A Met. 139	Study of metallurgical and mining operations in western mining districts	6			
B Met. 175	Study of metallurgical operations in important iron and steel centers	6			

SENIOR YEAR

Fall Quarter

A&B Met. 121	Ore Testing	2		1	3
A&B Met. 134	Advanced Metallurgy	4		3	4
A Met. 153	Metallography	4		3	4
A Min. 125	Metallurgical Hydraulics	3		3	
A	Electives	6			
B Chem.E. 76	Applied Electrochemistry	3		2	4
B Met. 141	Problems in Ferrous Metallurgy	3			9
or					
B Met. 166	Advanced Metallography Laboratory	3			9
B Met. 163	Advanced Metallography	3		3	
B	Electives	4			

Winter Quarter

Option	Course No.	Title	Credits	Rec.	Lect.	Lab.
A&B	Met. 135	Advanced Metallurgy	4	.....	3	4
A	Met. 122	Ore Testing	4	.....	2	8
A	Met. 137	Problems in Nonferrous Metallurgy.....	4	.....	2	8
A	Met. 154	Metallurgy	4	.....	3	4
A		Electives	3	.....	
B	Chem.E. 77	Applied Electrochemistry	3	.....	2	4
B	Met. 142	Problems in Ferrous Metallurgy.....	3	.....		9
	or					
B	Met. 167	Advanced Metallography Laboratory.....	3	.....		9
B	Met. 164	Advanced Metallography	3	.....	3	.....
		Electives	6	.....	

Spring Quarter

A&B	Met. 136	Advanced Metallurgy	4	.....	3	4
A	Met. 123	Ore Testing	4	.....	2	8
A	Met. 138	Problems in Ferrous Metallurgy.....	4	.....	2	8
A	Met. 155	Metallurgy	4	.....	3	4
A		Electives	3	.....	
B	Chem.E. 31	Chemistry of Engineering Materials.....	3	.....	3	.....
B	M.&M. 144	Materials Testing Laboratory.....	2	.....		4
B	Met. 143	Problems in Ferrous Metallurgy.....	3	.....		9
	or					
B	Met. 168	Advanced Metallography Laboratory.....	3	.....		9
B	Met. 165	Advanced Metallography	3	.....	3	.....
B		Electives	4	.....	

PHYSICS

Four-year course leading to the degree of bachelor of physics, B.Phys.

The sequence leading to the degree, bachelor of physics, is intended to be sufficiently broad to provide for the needs of those who desire to prepare for the industrial research field or for graduate work in physics as a major. The outline given is only suggestive and is not complete. A total of 207 credits is required.

A student entering this course may take the freshman program outlined for the first year in any of the curricula of the Institute of Technology except that for architecture. Those who maintain a satisfactory average (C or better) during the first year may register in this course.

It is clear that a student having the above objectives must attain an adequate background in mathematics and in chemistry. The work in physics is planned so as to give a greater or lesser contact with theoretical physics and experimental physics, depending upon the special aptitude of the applicant. Any special interest of the applicant may be met by a careful choice of elective courses which meets the approval of his adviser. The Department of Physics reserves the right to limit the registration in this course to those who have given evidence of being able to profit by it. Those who contemplate registering in the course should consult the chairman of the department.

General requirements for graduation.—The student must fulfill the requirements in credits earned (207) and standards of work required for graduation by the Institute of Technology. The student must include as a minimum:

A major in physics of 51 stated credits.

A minor in mathematics of 34 stated credits.

A minor in chemistry of 39 stated credits.

The following is the prescribed curriculum for the physics course. The student should consult his adviser in the choice of electives.

INSTITUTE OF TECHNOLOGY

SOPHOMORE YEAR

Fall Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
M.&M. 24	Calculus I: Differential	5	5	.....	.....
Anal.Chem. 7	Quantitative Analysis	4	1	1	8
E.E. 11	Elements of Electrical Engineering	3	2	1	.....
Phys. 7	General Physics	5	1	4	2

Winter Quarter

M.&M. 25	Calculus II: Integral	5	5	.....	.....
Org.Chem. 1	Elementary Organic Chemistry	4	2	3	4
E.E. 13	Elements of Electrical Engineering	3	2	1	.....
E.E. 14	Elements of Electrical Engineering Laboratory	1	.....	.....	2
Phys. 8	General Physics	5	1	4	2

Spring Quarter

Org.Chem. 2	Elementary Organic Chemistry	4	2	3	4
E.E. 15	Elements of Electrical Engineering	3	2	1	.....
E.E. 16	Elements of Electrical Engineering Laboratory	1	.....	.....	2
Phys. 9	General Physics	5	1	4	2
Engl. 8	Explorations in Literature	3	.....	3	.....

JUNIOR YEAR

Fall Quarter

M.&M. 151	Differential Equations	3	3	.....	.....
Phys.Chem. 101	Physical Chemistry	3	1	3	.....
Phys.Chem. 104	Physical Chemistry Laboratory	2	1	.....	5
Phys. 100	Intermediate Physics	3	3	.....	.....
Phys. 107	Modern Physics	3	.....	3	.....
Phys. 144	Electrical Measurements	3	1	1	4

Winter Quarter

M.&M. 152	Calculus III: Special Topics in Advanced Calculus	3	3	.....	.....
Phys.Chem. 102	Physical Chemistry	3	1	3	.....
Phys.Chem. 105	Physical Chemistry Laboratory	2	1	.....	5
Phys. 102	Intermediate Physics	3	3	.....	.....
Phys. 109	Modern Physics	3	.....	3	.....
	Electives*				

Spring Quarter

M.&M. 153	Calculus IV: Special Topics in Advanced Calculus	3	3	.....	.....
Phys.Chem. 103	Physical Chemistry	3	1	3	.....
Phys.Chem. 106	Physical Chemistry Laboratory	2	1	.....	5
Phys. 104	Intermediate Physics	3	3	.....	.....
Phys. 111	Modern Physics	3	.....	3	.....
	Electives*				

SENIOR YEAR

Fall Quarter

Phys. 101	Theoretical Physics	5	5	.....	.....
Phys. 134	Experimental Optics	4	.....	.....	8
German 24	Chemical German	3	4	.....	.....
	Electives*				

* For list of recommended electives, see page 67.

Winter Quarter

Course No.	Title	Credits	Rec.	Lect.	Lab.
Phys. 103	Theoretical Physics	5	5	.....	.....
Phys. 110	Modern Experimental Physics	4	.....	.....	8
Phys. 136	Spectrum Analysis	4	.....	.....	8
German 25	Chemical German	3	4	.....	.....
	Electives. (See below.)				

Spring Quarter

Phys. 105	Theoretical Physics	5	5	.....	.....
Phys. 112 or Elective	Modern Experimental Physics	4	.....	.....	8
German 26	Chemical German	3	4	.....	.....
	Electives. (See below.)				

RECOMMENDED ELECTIVES FOR PHYSICS CURRICULUM

Course No.	Title	Credits
Chem.E. 31s	Engineering Materials	3
Econ. 3f,w,s	Elements of Money and Banking	5
Econ. 8f,w,9w,s	General Economics, per quarter	3
Econ. 28f,s	Business Law	3
E.E. 111f	Junior Electrical Engineering	5
E.E. 113w-115s	Junior Electrical Engineering, per quarter	3
Engl. 21f-22w-23s	Introduction to Literature, per quarter	5
Engl. 37f-38w-39s	Twentieth-Century Literature, per quarter	3
Engl. 52f-53w	The English Novel, per quarter	3
Geol. 1f-2w	General Geology	6
Geol. Af-Bw	General Geology Laboratory	4
Geol. 8f,w,s	Introductory Geology	5
Hist. 1f-2w	European Civilization, per quarter	5
Hist. 4f-5w-6s	English History	9
M.&M. 84f,s	Technical Mechanics	5
M.&M. 154f	Vector Analysis	3
M.&M. 155w	Vector Analysis and Dyadics	3
M.&M. 156s	Elements of Tensor Analysis	3
M.E. 5f,w,s,su-9f,w,s-13f,w,s,su	Shop Practice, per quarter	2
Orient. 1f-2w-3s	Man in Nature and Society, per quarter	3
Phil. 1f,w,s	Problems of Philosophy	5
Phil. 2f,w,s	Logic	5
Phil. 3f,w,s	Ethics	5
Phil. 50f-51w-52s	General History of Philosophy, per quarter	3
Phil. 154	Logic of Science	3
Phys. 52w,s	Laboratory Arts	3
Phys. 61w	Introduction to Geophysical Prospecting	3
Phys. 113w	Intermediate Acoustics	3
Phys. 114f-116w-118s	Elementary Physical Investigation, per quarter	3
Phys. 124w	Pyrometry	3
Phys. 126s	Advanced Heat	3
Phys. 134f,w	Experimental Optics	3
Phys. 136w,s	Spectrum Analysis	3
Phys. 146s	Physics of Vacuum Tubes, Thermionics	3
Phys. 152s	X Rays	3
Phys. 154w	X-Ray Spectroscopy	3
Phys. 161f-162w	Principles of Geophysical Prospecting, per quarter	3
Phys.Chem. 116f-117w-118s	Advanced Physical Chemistry, per quarter	3
Psy. 1f,s-2w,s	General Psychology, per quarter	3
Psy. 3s	Psychology Applied to Daily Life	3
Zool. 1f-2w-3s	General Zoology	10

ADDITIONAL ELECTIVE COURSES

For detailed schedules of classes see the programs of the respective departments in the Combined Class Schedule for 1942-43.

Course No.	Title	Credits	Prerequisites
Ast. 11f,s	Descriptive Astronomy	5	None
French 1f,w,s-2f,w,s	Beginning French	10	None
French 3f,w,s-4f,w,s	Intermediate French	10	None
Geog. 11f,w,s	Human Geography	5	3rd qtr. fr., soph., jr., sr.; none
Geog. 41f,w,s	Geography of Commercial Production	5	Soph., jr., sr.; none
Ger. 1f,w,s	Beginning German A	5	None
Ger. 2f,w,s	Beginning German B	5	Ger. 1 or one year high school German
Ger. 3f,w,s	Beginning German C	5	Ger. 3 or two years high school German
Ger. 4f,w,s	Intermediate German	5	Ger. 3 or three years high school German
Hist. 1f,w-2w,s-3f,s	European Civilization	12	None
Hist. 4f-5w-6s	English History	9	None
Hist. 11f-12w-13s	Medieval History	9	None (arch. only)
Hist. 20f-21w-22s	American History	9	Soph., jr., sr.; none
Italian 1f-2w	Beginning Italian	10	None
Jour. 5s	The American Newspaper	3	None
Lib.Meth. 1f,w,s	Use of Books and Libraries	2	None (fr. and soph. only)
Phil. 2f,w,s	Logic	5	Soph., jr., sr.; none
Phil. 153w	Philosophy of Science	3	Phil. 2
Phil. 154s	Logic of Science	3	Phil. 153
Pol.Sci. 1f,w-2w,s-3s	American Government and Politics	9	None
P.M.&P.M. 3f,w,s	Personal Health	2	Fr., soph.; none
Psy. 1f,s-2w,s	General Psychology	6	None
Psy. 160f	Psychology in Personnel Work	3	Psy. 1-2, Econ. 8-9
Soc. 1f,w,s	Introduction to Sociology	5	None
Span. 1f,w,s-2f,w,s	Beginning Spanish	10	None
Span. 3f,w,s-4f,w,s	Intermediate Spanish	10	Spanish 1-2 or two years high school Spanish
Sp. 1f,w-2w,s-3f	Fundamentals of Speech	9	Engl. 6
Sp. 5f,w,s-6f,w,s	Fundamentals of Speech	10	Engl. 6
Study 1f,w,s	How To Study	2	Permission of instructor

BULLETIN OF THE
UNIVERSITY OF MINNESOTA

Condition Examination
Schedule
1942-43



Vol. XLV

No. 31

May 12, 1942

Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota. Accepted for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized July 12, 1918.

NOTICE TO STUDENTS WITH CONDITIONS

Under the regulations of the University Senate, examinations for the removal of conditions are offered in all colleges, including the Graduate School, during the week preceding the opening of the fall quarter, and, in those colleges offering such examinations more than once a year, during the first thirty days of the winter and spring quarters.

In order to remove a condition by examination, the examination must be taken at the first opportunity after a condition is received. Students not in residence the quarter following the receipt of a condition may defer their examinations until the regular examination period for the quarter that they are next in residence.

Conditions in courses in Economics and Business Administration may be removed only by taking the regular condition examination.

Under certain restrictions, students in the Colleges of Science, Literature, and the Arts; Agriculture, Forestry, and Home Economics; and Education may remove conditions in continuation courses without examination. Students should see the bulletin of the college concerned for these regulations.

Candidates for graduation the following June in Law or the combined course in Arts and Law may take examinations on the day following the spring recess to remove not more than two conditions in first term subjects. Any student desiring to take examinations under this provision is required to give notice in writing of his intention, specifying the subjects in which the examinations

are desired, such notice to be filed in the office of the dean not less than three weeks before the date of examination requested.

The fee for the privilege of removing a condition, either by examination or through completion of a continuation course is \$1. If payment is made by mail a check or money order should be sent. Students are cautioned against sending currency in unregistered letters.

The amount of the fee should be forwarded immediately on receipt of this notice together with a memorandum of the courses in which condition examinations are desired. (See last page of this announcement for form to be filled out and returned.)

The student's fee receipt will be sent to his post-office box and **must be presented to the instructor in charge of the examination.** In case of conflict between two examinations, report to the departments concerned or to the dean's office for adjustment.

For condition examinations in departments not listed below, individual arrangements should be made through the office of the dean of the college concerned. All such examinations, however, must be scheduled on or before the last day of the examination period.

An examination taken at any time other than that scheduled has the status of a **special examination** for which a fee of \$5 is charged.

Conditions not made up at this time (unless arrangements have previously been made for removal through continuation course) become "failures."

T. E. PETTENGILL, Recorder

CONDITION EXAMINATION SCHEDULE

Department or Course	Fall Quarter	Winter Quarter	Spring Quarter
Aeronautical Engineering	9:00 a.m. September 22	7:00 p.m. January 12	7:00 p.m. April 6
Agricultural Biochemistry	2:00 p.m. September 21	1:30 p.m. January 9	1:30 p.m. April 3
Agricultural Economics and Farm Management	9:00 a.m. September 22	1:30 p.m. January 16	1:30 p.m. April 17
Agricultural Education	9:00 a.m. September 22	1:30 p.m. January 9	1:30 p.m. April 3
Agricultural Engineering	9:00 a.m. September 22	1:30 p.m. January 9	1:30 p.m. April 3
Agronomy and Plant Genetics	9:00 a.m. September 22	1:30 p.m. January 9	1:30 p.m. April 3
Anatomy	1:30 p.m. September 26	1:30 p.m. January 9	1:30 p.m. April 3
Animal and Poultry Husbandry	9:00 a.m. September 21	1:30 p.m. January 9	1:30 p.m. April 3
Anthropology	9:00 a.m. September 21	1:30 p.m. January 9	1:30 p.m. April 3
Architecture	9:00 a.m. September 21	7:00 p.m. January 11	7:00 p.m. March 29
Art Education	9:00 a.m. September 21	1:30 p.m. January 30	1:30 p.m. April 17
Astronomy	9:00 a.m. September 21	1:30 p.m. January 9	1:30 p.m. April 3
Bacteriology	2:00 p.m. September 26	1:30 p.m. January 9	1:30 p.m. April 3
Beekeeping (See Entomology and Economic Zoology)			
Botany	2:00 p.m. September 22	1:30 p.m. January 23	1:30 p.m. April 10
Business Administration	9:00 a.m. September 22	1:30 p.m. January 9	1:30 p.m. April 10
Chemistry (except for Institute of Technology)	2:00 p.m. September 21	1:30 p.m. January 9	1:30 p.m. April 3

Department or Course	Fall Quarter	Winter Quarter	Spring Quarter
Chemistry (for Institute of Technology)	2:00 p.m. September 21	1:30 p.m. January 9	1:30 p.m. April 3
Child Welfare	2:00 p.m. September 25	1:30 p.m. January 9	1:30 p.m. April 3
Civil Engineering	9:00 a.m. September 23	7:00 p.m. January 13	7:00 p.m. April 7
Classics	2:00 p.m. September 21	1:30 p.m. January 16	1:30 p.m. April 10
Dairy Husbandry	9:00 a.m. September 21	1:30 p.m. January 16	1:30 p.m. April 17
Dental Hygiene	Consult department		
Dentistry	Consult instructor for dates and hours		
Drawing and Descriptive Geometry	9:00 a.m. September 21	7:00 p.m. January 11	7:00 p.m. April 5
Economics	9:00 a.m. September 22	1:30 p.m. January 9	1:30 p.m. April 10
Educational Administration	9:00 a.m. September 25	1:30 p.m. January 30	1:30 p.m. April 17
Educational Psychology	9:00 a.m. September 24	1:30 p.m. January 23	1:30 p.m. April 10
Electrical Engineering	2:00 p.m. September 22	7:00 p.m. January 14	7:00 p.m. April 8
English, including Composition (except for Institute of Technology)	2:00 p.m. September 24	1:30 p.m. January 30	1:30 p.m. April 24
Composition (for Institute of Technology)	9:00 a.m. September 25	7:00 p.m. January 5	7:00 p.m. March 30
Entomology and Economic Zoology	9:00 a.m. September 21	1:30 p.m. January 4	1:30 p.m. April 3
Fine Arts	2:00 p.m. September 22	1:30 p.m. January 16	1:30 p.m. April 10
Forestry	2:00 p.m. September 21	1:30 p.m. January 16	1:30 p.m. April 14
General Education	9:00 a.m. September 25	1:30 p.m. January 30	1:30 p.m. April 10

Department or Course	Fall Quarter	Winter Quarter	Spring Quarter
General Engineering	2:00 p.m. September 21	7:00 p.m. January 12	7:00 p.m. April 6
Geography	9:00 a.m. September 22	1:30 p.m. January 9	1:30 p.m. April 3
Geology and Mineralogy (except for Institute of Technology)	2:00 p.m. September 22	1:30 p.m. January 23	1:30 p.m. April 17
Geology and Mineralogy (for Institute of Technology)	9:00 a.m. September 22	1:30 p.m. January 16	7:00 p.m. April 10
German (except for Institute of Technology)	2:00 p.m. September 22	1:30 p.m. January 23	1:30 p.m. April 10
German (for Institute of Technology)	2:00 p.m. September 22	1:30 p.m. January 16	1:30 p.m. April 10
History	9:00 a.m. September 22	1:30 p.m. January 23	1:30 p.m. April 10
Home Economics	2:00 p.m. September 21	1:30 p.m. January 16	1:30 p.m. April 17
Home Economics Education	2:00 p.m. September 21	1:30 p.m. January 9	1:30 p.m. April 3
Horticulture	9:00 a.m. September 22	1:30 p.m. January 23	1:30 p.m. April 17
How To Study	2:00 p.m. September 22	1:30 p.m. January 23	1:30 p.m. April 10
Industrial Education	9:00 a.m. September 21	1:30 p.m. January 23	1:30 p.m. April 10
Journalism	2:00 p.m. September 22	1:30 p.m. January 23	1:30 p.m. April 10
Library Methods	9:00 a.m. September 22	1:30 p.m. January 16	1:30 p.m. April 3
Linguistics and Comparative Philology	2:00 p.m. September 22	1:30 p.m. January 23	1:30 p.m. April 10
Mathematics	9:00 a.m. September 23	1:30 p.m. January 23	1:30 p.m. April 10
Mathematics and Mechanics	2:00 p.m. September 23	7:00 p.m. January 6	7:00 p.m. March 31

Department or Course	Fall Quarter	Winter Quarter	Spring Quarter
Mechanical Engineering	9:00 a.m. September 23	7:00 p.m. January 8	7:00 p.m. March 30
Medicine	Consult department		
Metallography and Metallurgy	9:00 a.m. September 24	7:00 p.m. January 11	7:00 p.m. April 5
Methods and Directed Teaching	9:00 a.m. September 23	1:30 p.m. January 17	1:30 p.m. April 4
Military Science and Tactics	9:00 a.m. September 23	1:30 p.m. January 9	1:30 p.m. April 3
Mining	2:00 p.m. September 25	7:00 p.m. January 13	7:00 p.m. April 7
Music	9:00 a.m. September 23	1:30 p.m. January 16	1:30 p.m. April 10
Natural Science	9:00 a.m. September 23	1:30 p.m. January 16	1:30 p.m. April 17
Naval Science and Tactics	9:00 a.m. September 23	1:30 p.m. January 9	1:30 p.m. April 3
Nursing (courses not given by other departments)	Consult department		
Obstetrics and Gynecology	Consult department		
Pathology	Consult department		
Pediatrics	Consult department		
Petroleum Engineering	9:00 a.m. September 25	7:00 p.m. January 7	7:00 p.m. April 1
Pharmaceutical Chemistry 1,2,3 (Inorganic)	2:00 p.m. September 25	9:00 a.m. January 24	2:30 p.m. April 7
Pharmaceutical Chemistry	9:00 a.m. September 24	9:00 a.m. January 16	9:00 a.m. April 17
Pharmacognosy	9:00 a.m. September 25	9:00 a.m. January 23	9:00 a.m. April 10
Pharmacy	9:00 a.m. September 26	9:00 a.m. January 9	9:00 a.m. April 3
Philosophy	9:00 a.m. September 23	1:30 p.m. January 23	1:30 p.m. April 17
Physical Education for Men	9:00 a.m. September 23	1:30 p.m. January 23	1:30 p.m. April 24

Department or Course	Fall Quarter	Winter Quarter	Spring Quarter
Physical Education for Women	9:00 a.m. September 23	1:30 p.m. January 23	1:30 p.m. April 24
Physics (except for Institute of Technology)	2:00 p.m. September 23	1:30 p.m. January 30	1:30 p.m. April 24
Physics (for Institute of Technology)	2:00 p.m. September 24	7:00 p.m. January 7	7:00 p.m. April 1
Physiology	9:00 a.m. September 26	9:00 a.m. January 16	9:00 a.m. April 17
Plant Pathology and Botany	9:00 a.m. September 21	1:30 p.m. January 16	1:30 p.m. April 17
Political Science	2:00 p.m. September 23	1:30 p.m. January 30	1:30 p.m. April 24
Preventive Medicine and Public Health	2:00 p.m. September 21	1:30 p.m. January 9	1:30 p.m. April 10
Psychology	9:00 a.m. September 21	1:30 p.m. January 9	1:30 p.m. April 3
Radiology	Consult department		
Rhetoric (University Farm)	9:00 a.m. September 21	1:30 p.m. January 16	1:30 p.m. April 17
Romance Languages	9:00 a.m. September 23	1:30 p.m. January 16	1:30 p.m. April 17
Rural Journalism	9:00 a.m. September 21	1:30 p.m. January 23	1:30 p.m. April 17
Scandinavian	2:00 p.m. September 23	1:30 p.m. January 30	1:30 p.m. April 24
Sociology	2:00 p.m. September 24	1:30 p.m. January 16	1:30 p.m. April 10
Soils	2:00 p.m. September 21	1:30 p.m. January 30	1:30 p.m. April 17
Speech	2:00 p.m. September 24	1:30 p.m. January 30	1:30 p.m. April 24
Surgery	Consult department		
Veterinary Medicine	2:00 p.m. September 21	1:30 p.m. January 30	1:30 p.m. April 19
Zoology	2:00 p.m. September 24	1:30 p.m. January 23	1:30 p.m. April 17

THE RECORDER,
University of Minnesota

Fee receipt must be presented for admission to examination. At the opening of winter or spring quarter, payment should be made in person to obtain receipt. Fee statement may be obtained at your college window, Office of Admissions and Records.

Dear Sir :

Enclosed please find remittance for \$ _____, for condition examinations in the following courses :

Signed _____

School or College _____

(Please send check or money order payable to the University of Minnesota. Do not send cash.)

The Bulletin
of the
University of Minnesota



Course in Embalming

1942-1943

CALENDAR

1942-43

Physical examination	Thursday, Friday, Saturday, September 24, 25, 26, 1942
Last day for fall quarter registration	Saturday, September 26
Fall quarter classes begin	Monday, September 28
Armistice Day, a holiday	Wednesday, November 11
Thanksgiving Day, a holiday	Thursday, November 26
Fall quarter closes (Christmas recess)	Friday, December 18
Last day for winter quarter registration	Saturday, January 2, 1943
Winter quarter classes begin	Monday, January 4
Lincoln's Birthday, a holiday	Friday, February 12
Washington's Birthday, a holiday	Monday, February 22
Winter quarter closes	Friday, March 19
Last day for spring quarter registration	Saturday, March 27
Spring quarter classes begin	Monday, March 29
Good Friday, a holiday	Friday, April 23
Memorial Day, a holiday	Monday, May 31
Minnesota State Board examinations	Monday, Tuesday, Wednesday, (Final examinations) June 14, 15, 16
Spring quarter closes	Friday, June 18

Students in the Course in Embalming will have a Christmas recess from December 18 to January 4.

EXAMINATIONS

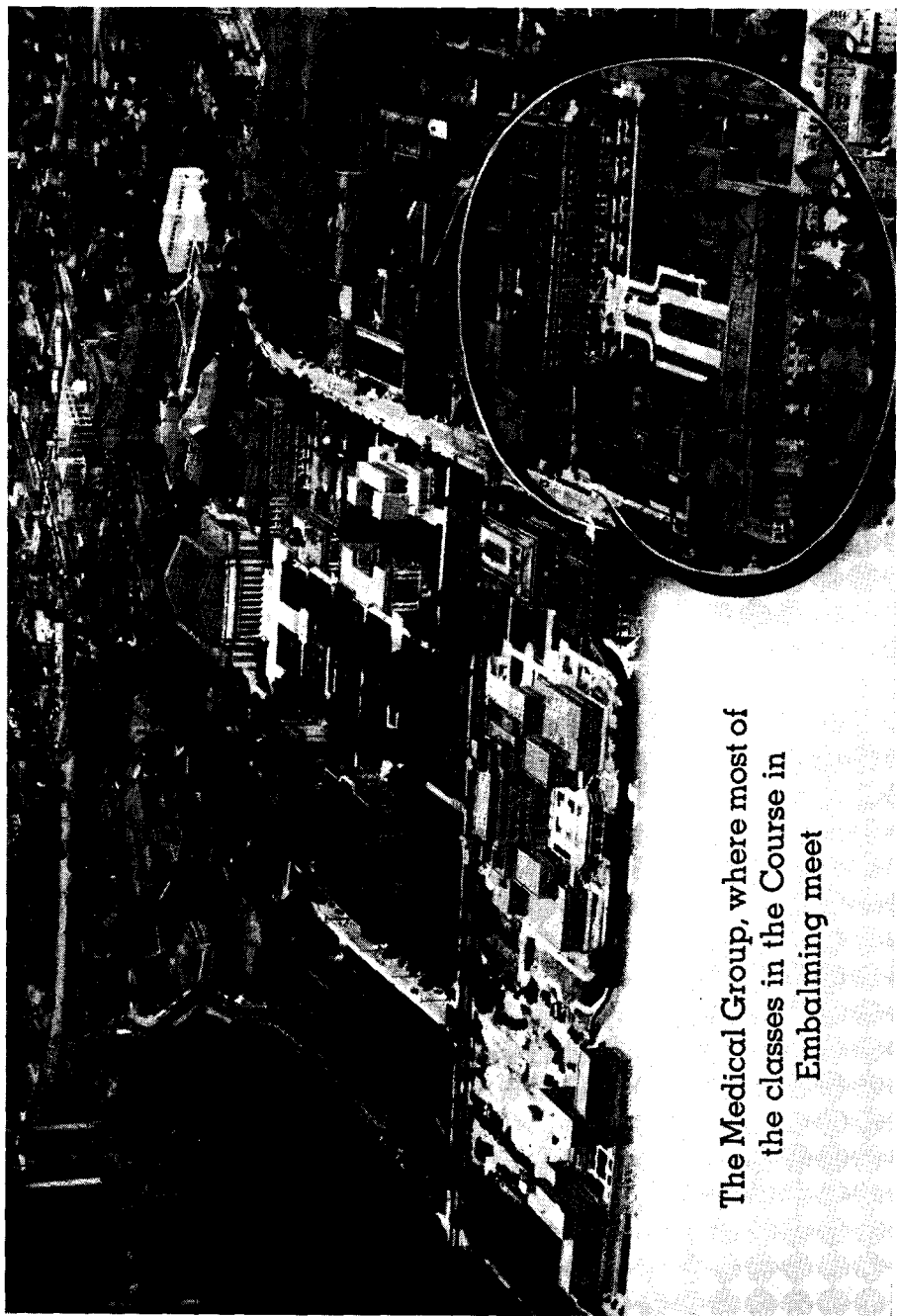
On June 14, 15, 16, 1943, will be held the State Board examinations for license, as well as the final examinations of the Course in Embalming.

Volume XLV

Number 32

May 14, 1942

Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota. Accepted for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized July 12, 1918



The Medical Group, where most of
the classes in the Course in
Embalming meet

THE COURSE IN EMBALMING

The University of Minnesota, through the co-operation of the Medical School and other schools of the University, the Minnesota State Department of Health, and the Minnesota Funeral Directors' Association, announces the thirtieth annual session of the Course in Embalming, September 28, 1942 to June 18, 1943. The complete nine months' course will be conducted in three university quarters of twelve weeks each. The work combines instruction in the necessary basic sciences, training in the technical details of practical embalming, and instruction in business methods and procedures and in those subjects required by the State Department of Health as essential to the welfare of the community in which the funeral director operates.

The course of instruction for the embalmer was established at the University of Minnesota by act of the Board of Regents on April 4, 1908. No effective organization was made, however, and the work lapsed until it was resumed during the year 1913-14 in the Medical School. The first session began January 5, 1914, and lasted six weeks. At that time, only an eighth grade education was required for entrance to the course. After the second annual session, held in January and February, 1915, the course was extended to eight weeks, and one year of high school work was required for admission. Since then, the length of the course has been successively extended to twelve weeks, twenty-four weeks, and, in 1932, to nine months. The completion of four years of high school work is now required for admission. Since 1921, the administrative control of the course has been entrusted to the General Extension Division.

The student of embalming at the University of Minnesota has certain advantages. The instruction is given by members of the faculties of the Medical School, Institute of Technology (School of Chemistry, Departments of Art and Architecture, and School of Mines and Metallurgy), School of Business Administration, College of Science, Literature, and the Arts, and Division of Forestry. All necessary laboratory facilities are available in the several departments, and equipment and supplies are always adequate. University standards of instruction and achievement are maintained. The result is a course comparable with other university courses, and students who successfully complete it are granted a university certificate.

The Twin Cities, Minneapolis and St. Paul, with a population of nearly a million people, offer abundant facilities for clinical study. The State Department of Health and the local association of funeral directors co-operate with the University in the conduct of the course, and every possible source, public and private, for laboratory and case material is made available.

The prospective student should clearly understand that this is not merely a trade school, or training school, for the acquisition of certain skills in embalming bodies and preparing them for burial. Throughout the course, emphasis is placed upon the basic sciences and on the knowledge requisite for conducting a business of this kind in the interest of the general public and of the community in which the business may be located.

In addition instruction of a general cultural nature is provided. Finally, there are lectures, demonstrations, and laboratory work in practical embalming. The University considers this practical training very important but does not overstress it, believing that technical skill may best be acquired through experience gained during the apprenticeship required by state law. All instruction is on the college level.

VOCATIONAL ADVICE

If prospective students have any doubt as to their probable success or satisfaction as embalmers it might be well for them to consult all available sources of information regarding the nature of the work and the personal traits necessary for success in it. One such source is a monograph entitled *Mortuary Operation As a Career*. It is published and sold by the Institute for Research, 537 South Dearborn Street, Chicago, Illinois. Another source is T. J. Bonniwell's *We Have To Die*, published by the Worthington Press, New York. Additional sources of information are the trade journals. Practicing embalmers and funeral directors ought also to be consulted. Finally, officials of the General Extension Division who have charge of the Course in Embalming are available for consultation.

HEADQUARTERS OF THE COURSE

The office of the director of the General Extension Division, who is also the director of the Course in Embalming, is Room 402, Administration Building, on the University campus. This building may be reached by the Minneapolis-St. Paul street cars running via Washington and University Avenues. Passengers should get off at Washington Avenue S.E. and Church Street.

GENERAL INFORMATION

ADMISSION

General.—The University requires applicants for admission to the Course in Embalming to be at least nineteen years of age, but note that the State Board of Health ordinarily admits to its examination for license (in 1943: June 16) only persons who are at least twenty years of age at the date of the examination. Applicants must also be graduates of a four-year high school or of a three-year high school preceded by junior high school. An equivalent education properly certified may be accepted by the director.

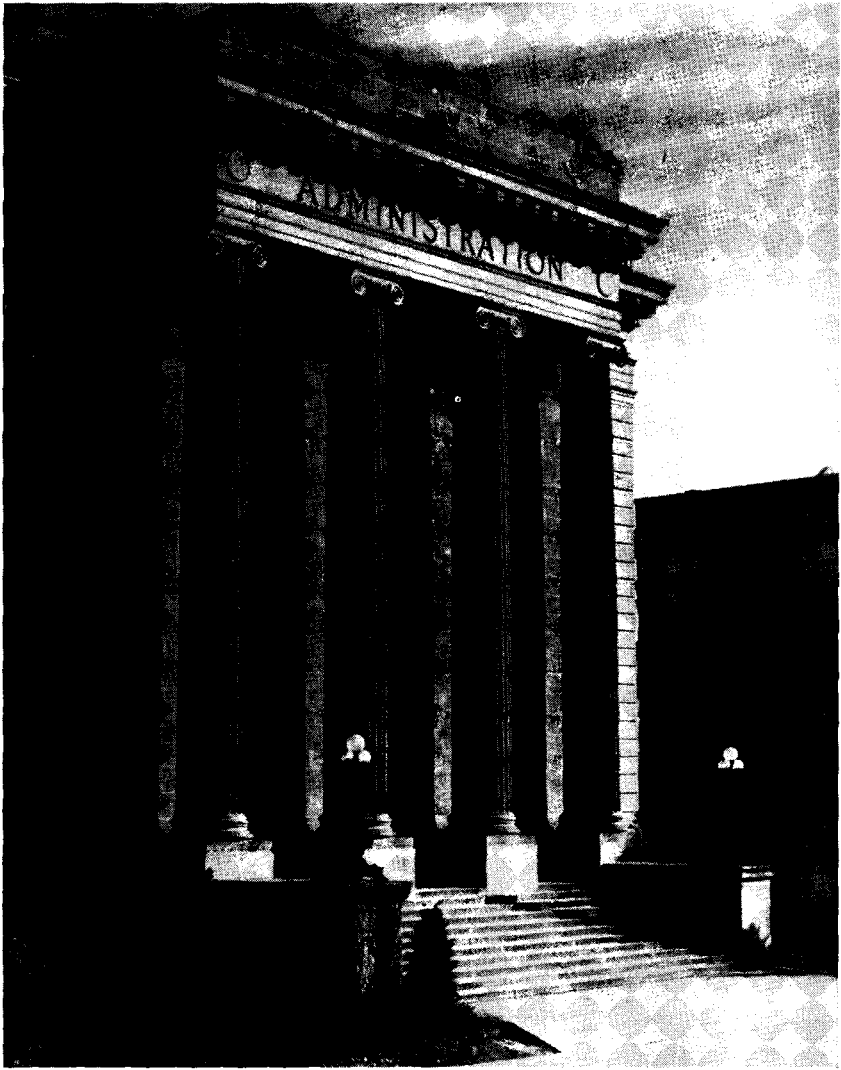
No previous experience in embalming is required for entrance to the course; but no amount of experience will be accepted in place of the required high school training.

Special notice for Minnesota students.—Students who desire to become eligible for the embalmer's license in the state of Minnesota (see pages 9 to 10) must have completed a year (45 quarter credits, or 30 semester credits, or their equivalent) of general study in an accredited college or university before entering the Course in Embalming. The General Extension Division will determine for applicants whether their work has been in an acceptable accredited institution. Those who do not conform to this rule will not be considered candidates for the embalmer's license in Minnesota. The subject matter to be covered in this study is not prescribed. It is recommended, however, that it include a full year of English composition, together with some work in general biology (botany, zoology, or human physiology), and in the social sciences (economics, political science, or sociology). Introductory work in such Course in Embalming subjects as accounting, art, and chemistry will also be useful.

N.B.—This year of college study must not be considered as prerequisite to admission to the Course in Embalming. Those not interested in a license to practice in Minnesota or in any other state having a college requirement may disregard it.

But prospective students should ascertain the exact requirements of their own state, or the state in which they hope to secure a license, before entering this or any other school.

Applications for admission.—Applicants for admission will be supplied with a standard blank which asks for certain information. This includes a certified statement from the high school principal, or other proper official, covering the applicant's high school



record and an estimate of his probable success. If the applicant has studied at a collegiate institution beyond high school, the certified statement by the high school principal may be omitted but a similar certified statement must be submitted by the collegiate institution attended, showing the applicant's complete record, including an honorable dismissal.

The application for admission, properly and completely filled out, should be sent to the General Extension Division for consideration. It must be accompanied by letters or certificates signed by a reputable physician and a reliable business man or firm, attesting to the good moral character of the applicant. Applications, if satisfactory, will be accepted in the order of their receipt. The right is reserved to limit the number of registrations, and application for admission should be filed as much in advance of the registration date as possible.

N.B.—New students will not be admitted except at the beginning of the fall quarter.

REGISTRATION

Registration days.—Persons whose applications have been accepted will register at Room 402, Administration Building (picture on opposite page), on the campus of the University of Minnesota. This registration must be completed by the payment of fees on or before Saturday, September 26, 1942, by twelve o'clock noon. The acceptance of registrations offered later than this day cannot be guaranteed; but late registrations accepted are subject to an extra fee (see Fees and Expenses, below). Registrations, with the payment of fees, for subsequent quarters must be completed before noon of the Saturday preceding the first meeting of the classes.

FEEs AND EXPENSES

Tuition.—The tuition fee for residents of the state of Minnesota is \$50 for each quarter; for residents of other states, \$70 per quarter. Fee for less than a full program of work: residents \$2.50 per clock hour, nonresidents \$3.50 per clock hour. Fees are payable by the quarter, at registration. All checks should be made payable to the University of Minnesota, and should be drawn for **not more than the amount due.**

Incidental fee.—All students of the University are charged an incidental fee of \$9 per quarter, payable at registration, covering the following services: the privileges of the Coffman Memorial Union, the Testing Bureau, the *Minnesota Daily* including the Official Daily Bulletin, the university post-office service, *University Address Book*, the University Health Service which includes a complete physical examination, and other items.

General deposits.—At the student's first registration a deposit fee of \$5 is required. From this are deducted from time to time such charges as may arise for locker rental, laboratory breakages, library fines, damage to university property, or any other similar matters. If the deposit becomes exhausted at any time another deposit of \$5 must be paid. The unused balance of the deposit will be returned at the close of the course, or upon withdrawal of the student at any earlier time.

Privilege fees.—The fee for the privilege of late registration, or late payment of fees, is \$2 through the third day of classes; on the fourth day the fee is \$2.50 and then increases 50 cents per day to a maximum of \$5.

Chemical laboratory.—Each student at the beginning of the course will purchase at the chemistry storehouse a \$5 card; against this will be charged the laboratory fee of \$2, and materials and breakage for the quarter. Subsequent cards will be required in succeeding quarters, but unused portions may be returned for refund.

Examination fees.—A special fee of \$1 is charged for an examination to remove the grade of condition, and this becomes a \$5 fee when the examination is taken at other than the set time.

Books.—The student should be prepared to purchase textbooks to the amount of at least \$25.

Living expenses.—Good rooms for lodging may be secured in the vicinity of the campus for from \$12 to \$15 per month per student. This cost may be somewhat reduced when two students occupy the same room. These charges do not include personal laundry. Board may be obtained for from \$5 to \$8 per week. The Coffman Memorial Union maintains a cafeteria at which meals are furnished at a moderate cost. Information about lodgings may be obtained from the Housing Bureau on the campus.

STUDY REGULATIONS

Each student will complete the entire amount of work prescribed in the course of study, except in cases where some part of the required work has previously been satisfactorily completed. In all cases, attendance is required for the full three quarters. (See Course of Study, page 11.) This work is not measured in credits, and is ordinarily not transferable to other institutions or to other divisions of this University in terms of credits toward a degree.

Quality of work.—Four grades, A, B, C, and D, are given for work of varying

degrees of merit, D being the lowest passing grade. Work below passing is graded E, a condition, or F, failure. Work which is of passing grade, but for acceptable reasons not complete, may be graded I, incomplete, provided not more than one fourth remains incomplete, pending its satisfactory completion.

A condition is a temporary grade, representing a deficiency which may be made up, without repeating the course, either by doing additional work, or by examination, or both, as the instructor may prescribe. (See examination fees, above.)

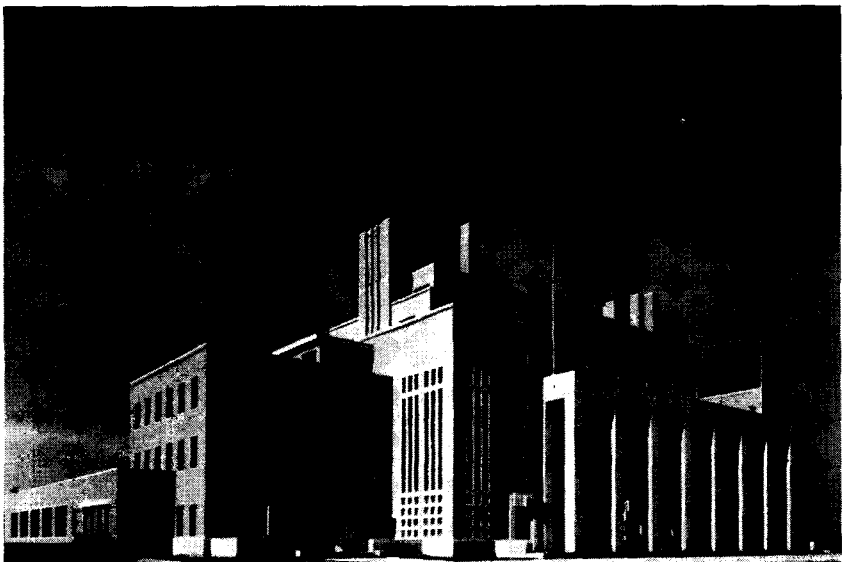
A failure in an early quarter of a class which runs two or more quarters may be offset by satisfactory performance in a later quarter of such class. But a failure in a class which runs only one quarter, or a final failure in a class which runs two or more quarters, usually means that the student must return to the University to make up the failure the following year, since the work of the several quarters is not ordinarily repeated until the next year. A student who is deficient in an inordinate amount of work in any quarter may be required to withdraw from the course.

Attendance.—Students are expected to attend regularly all classes, laboratory sessions, lectures, and clinical calls. Instructors will report irregularities in attendance or excessive absence, for attention by the Students' Work Committee of the General Extension Division.

MISCELLANEOUS

Employment.—Students of this course sometimes obtain part-time employment in the mortuaries of Minneapolis and St. Paul. A list of these mortuaries is available on request. The cost of room rent is thus defrayed and perhaps some additional money earned. **The student should be advised, however, that he may carry only a limited amount of such outside work if he expects to complete the course successfully. The curriculum is crowded and will demand most of his time and energy.** Moreover, he is on call at all daytime hours to attend autopsies or to take part in the technical work of clinical cases.

Students are strongly advised not to attempt to attend this course unless they are able to make adequate provision for financing the year's work.



Coffman Memorial Union—Social Center

Freshman Week.—Students in the Course in Embalming are invited to take part in the exercises of Freshman Week, September 23-26, provided for all new entering students. These days are occupied with a variety of events that have been found profitable to new students.

How To Study Institute.—Students in the Course in Embalming are also welcome to attend without charge the series of five lectures on how to study which come at seven o'clock, Monday to Friday evenings, September 21-25.

Physical examination.—At some time during the three days, September 24, 25, 26, all new students will present themselves at the Health Service for the required physical examination.

University Library.—The University of Minnesota General Library, one of the most complete in the country, with a special division in the biological and medical sciences, is available for use by students in this course. The library has certain rules and regulations, copies of which will be furnished students.

Athletic recreation.—The university facilities for physical education, recreational sports, and intramural activities are open to students of the Course in Embalming. Participation is invited. A booklet, giving detailed information regarding physical education and athletics for men, is issued to all students at the time of the physical examination, September 24, 25, 26. Additional information may be obtained at the Intramural Athletics office, 203 Cooke Hall. Since membership on intercollegiate squads is limited to students who are candidates for a degree it is not open to students of this course.

Athletic tickets.—Students in the Course in Embalming are eligible to obtain the regular university athletic season tickets at the customary reduced rates. Directions for obtaining these tickets and schedules of games may be found in the Official Daily Bulletin.

EXAMINATIONS FOR UNIVERSITY CERTIFICATE

At the end of the last quarter of any class running for more than one quarter, examinations are given which cover the work of all preceding quarters in this class. The degree of success attained by any student in these examinations determines his final grades. At the close of the spring quarter the University Certificate in Embalming is issued to those students who have successfully completed all the work of the course. This is the University's recognition of satisfactory work; it should be understood that the certificate is issued entirely without reference to the legal requirements for the issuance of the Minnesota state embalmer's license. The requirements for that license and the qualifications for applicants are given below.

EXAMINATIONS FOR MINNESOTA STATE LICENSE

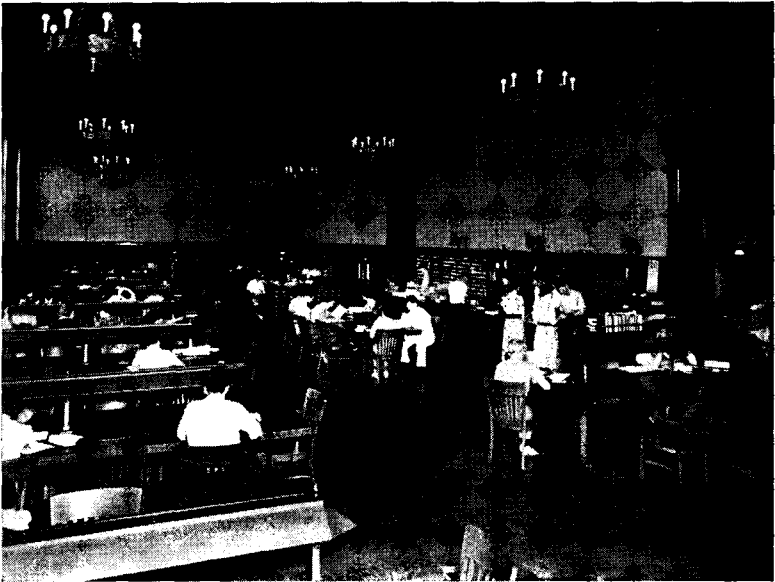
Candidates for a Minnesota embalmer's license must pass satisfactorily the examination given by the Minnesota Department of Health. The examination is conducted annually and is open to all applicants who have complied with the requirements of the law and the regulations of the Minnesota Department of Health; it is generally given at the close of the school year. The Department of Health is responsible for its examinations and collects a fee of \$10 from each applicant. After complying with the necessary requirements given below and passing these examinations, the applicant will receive the state license. Students in this course should discriminate carefully between the state requirements for a license and the requirements of the University for a certificate.

Necessary qualifications.—The Minnesota Department of Health requirements for embalmer's license are as follows:

Embalmers—Examination and License

29. Every funeral director or embalmer who wishes to qualify as competent to prepare a body for burial or transportation, as required by the laws of the State of Minnesota (sections 5817-5822, inclusive, Mason's *Minnesota Statutes, 1927*), shall comply with the following requirements:

He shall make application to the Minnesota State Board of Health for a license. Such application shall contain the name of the applicant in full, age, and place of residence. It shall be endorsed by a licensed embalmer and two registered physicians of good repute as to the applicant's general standing.



Biological-Medical Room, Main Library

Necessary Qualifications

The applicant must be at least twenty-one years of age; must have satisfactorily completed at least one scholastic year in a general educational course at an accredited college or university, and in addition thereto must have completed a course of study and secured a certificate of graduation from the Course of Embalming and Funeral Directing conducted by the University of Minnesota or any established school of embalming recognized and graded "AA" or "A" by the Conference of Funeral Service Examining Boards of the United States, Incorporated. Provided that any person who has attended a one-year course in embalming conducted by the University of Minnesota, but who has failed in the examinations for the university certificate in not more than two of the subjects, shall be permitted to take the board's examination for license and the subjects he passes in such examination shall be recorded and upon obtaining the university certificate he shall be required to pass the board's examination only in the subjects in which he may have failed.

Provided, further, that following the educational work outlined herein, said applicant has had at least one year of practical experience (apprenticeship) under a licensed embalmer, during which he has embalmed or helped to embalm at least twenty-five bodies, and on condition applicant has been registered with the State Board of Health during the full period of his practical experience, or apprenticeship. Applicant must attain a proficiency of at least seventy-five (75) per cent in each of the following subjects, in which he shall be examined by the State Board of Health:

Anatomy	10 questions
Bacteriology	10 questions
Elementary Chemistry	10 questions
Public Health, Sanitation, and Laws and Regulations.....	20 questions
The Practice of Embalming.....	20 questions
Business Methods	5 questions

NOTE: The year of college work must be taken in advance of the Course in Embalming.

N.B.—By action of the Minnesota State Board of Health no examination for a license will be given to anyone under twenty years of age.

For further information concerning the state embalmer's license apply to the State Department of Health, State Office Building, St. Paul.

COURSE OF STUDY

The following subjects constitute the work of the Course in Embalming; hours indicated are approximate. These subjects are divided among the three quarters which constitute the year and a program of their times and places of meeting is issued at the beginning of each quarter. Each student will consider himself obligated to do all the work prescribed.

ACCOUNTING AND BUSINESS METHODS

72 hours. This course will include the typical accounting problems of the funeral director, the development of an accounting set for a funeral establishment, the economic institutions with which the funeral director comes into immediate contact, office methods.

ANATOMY

Shirley P. Miller, Ph.D., Assistant Professor of Anatomy, and assistants.

216 hours. Lectures, recitations, and laboratory demonstrations of the thoracic and abdominal viscera. The laboratory work will deal with both microscopic anatomy and gross dissection. Each student will obtain experience in personally raising different arteries, and will familiarize himself with the anatomy relating to practical embalming.

Subjects of study:

1. The cells, tissues, organs
2. The framework of the body
3. The musculature: topography of the viscera
4. The alimentary canal
5. The circulatory systems
6. The respiratory system
7. The urinary system
8. The reproductive system

ART

S. Chatwood Burton, M.A., Professor of Fine Arts.

24 hours. Lectures and practical demonstrations in sculpture, color, light, and design. Subjects of study:

Sculpture.—(1) The art of modeling and cosmetics as applied to the rebuilding of the human face and body. (2) The structure of the skull. (3) Muscular structure. (4) Differences in muscular coverings. (5) Forms to be found in the eyes, mouth, nose, and other portions of the face, head, and body. (6) Methods and materials used in the making of death masks.

Color.—(1) Analyses of color. (2) How color reveals or destroys form. (3) Color to give the effect of beauty. (4) Effect of environment on the appearance of color. (5) Subtractive and additive methods of mixing colors.

Light and shade.—(1) Light and shade in vision and the arts. (2) Light and its effect on form. (3) Exterior lighting. (4) Reflective light and its uses. (5) Light to express moods. (6) Light to present beauty and character.

Design.—Its application to floral arrangements, caskets, and interiors.

BACTERIOLOGY

Winford P. Larson, M.D., Professor of Bacteriology, and assistants.

72 hours. Lectures, recitations, demonstrations, and practical work for each student. Subjects of study:

1. Classification of bacteria. Morphological types
2. Saprophytic bacteria in their relation to the natural processes of putrefaction, liquefaction, and oxidation of animal and vegetable tissues
3. Parasitic or disease-producing bacteria
4. Methods of differentiating bacteria
5. Methods of cultivating bacteria
6. Methods of estimating the number of bacteria in measured quantities of material
7. Practical studies of disinfection and disinfectants



One of the University Laboratories

CHEMISTRY

Norville C. Pervier, Ph.D., Assistant Professor of Chemistry.

144 hours. Lectures, demonstrations, and individual laboratory work covering fundamental ideas of inorganic and organic chemistry. The chemistry of the body and of disinfection and sanitation and certain general chemical actions involved in the work of embalmers will be presented. Subjects of study:

1. General principles: (a) the science of chemistry, (b) the structure of matter, (c) the behavior of matter, (d) chemical action, (e) types of chemical change.
2. Inorganic chemistry: (a) typical nonmetallic elements, (b) solutions, (c) acids, bases, and salts, (d) ionization, (e) typical metallic elements, (f) naming of chemical compounds.
3. Organic chemistry: (a) classification, (b) structure, (c) reaction, (d) naming.
4. Physiological chemistry: (a) enzymes and enzyme action, (b) compounds usual in organized life, (c) respiratory processes, (d) digestive processes, (e) chemical actions in the tissues, (f) colloids.
5. Toxicology: (a) classification of poisons, (b) action in the body, (c) diagnosis of poisoning, (d) tests, (e) antidotes, (f) Minnesota law.
6. Chemical changes in cadavers: (a) signs of death, (b) rigor, (c) autolysis, (d) putrefaction, (e) adipocere, (f) tissue gas. (g) lividities.
7. Disinfection: (a) standardization, (b) chemicals and concentrations used, (c) methods, (d) calculations.
8. Embalming fluids: (a) ingredients, (b) chemical actions in the body, (c) testing, (d) compounding, (e) analysis, (f) calculations.

ENGLISH

Ray Livingston, B.S., Instructor in English.

72 hours. The fundamentals of good spoken and written English together with an orientation in modern periodical literature and the problems it deals with. Lectures and drills on the fundamentals of grammar and rhetoric. Practice in writing themes, research papers, business correspondence; practice in preparing and giving oral reports and speeches.

FIRST AID

24 hours. First aid techniques for accidents and other emergencies. Concerned primarily with general first aid but will also include instruction useful to persons who may be called upon to operate ambulances. The course will correspond to the Standard American Red Cross Course, and those who pass the required examinations will receive the Standard Red Cross Certificate.

FUNERAL LAW

Arthur L. H. Street, LL.B., Attorney, Lecturer.

12 hours. Lectures on basic funeral law and mortuary jurisprudence.

FUNERAL MANAGEMENT

Twin City funeral directors and university instructors.

24 hours. These lectures are intended to acquaint the student with the best current practice in funeral management. They offer an opportunity to meet local morticians of long experience and high standing, and to acquire practical, dependable information about the important aspects of operating a funeral establishment—an opportunity whose value students will readily appreciate. The lectures will deal with such subjects as the following :

History of embalming	Lighting and music
Literature of mortuary practice	Metal caskets and vaults
Funeral directing as a career	Wooden materials used in mortuary practice
Ethics of funeral directing	Showrooms and salesmanship
Conduct of Catholic, Episcopal, Jewish, fraternal organizations, and military funerals	Costs and overhead expenses
Building and remodeling funeral homes	Advertising
Furnishing a funeral establishment	Selling
Cosmetics and hairdressing	Credits and collections
Floral arrangements	The funeral director's place in the community
	The state association of funeral directors

HYGIENE

Carl J. Potthoff, M.D., M.P.H., Associate Professor of Biological Sciences.

24 hours. The study of personal hygiene, with attention to precautions against the hazards of embalming. Right living habits as related to physical and mental health. Attention to the chief causes of disability and death from the point of view of personal hygiene.

PATHOLOGY

Elexious T. Bell, M.D., Professor of Pathology, and assistants.

96 hours. Lectures on gross pathology, with demonstration. Attendance at autopsies when arrangements can be made.

PRACTICAL EMBALMING AND FUNERAL DIRECTION

F. Lloyd Hansen, M.A., Instructor in Embalming.

170 hours. Lectures, demonstrations, and other visual presentations, laboratory practice, and clinical work. Class participation in actual embalming will be emphasized. Subjects of study will include the following :

1. Scope of profession
2. Modes of death
3. Signs of death
 - a. Livoris mortis
 - b. Algor mortis
 - c. Rigor mortis
 - d. Decomposition and putrefaction
4. Discoloration
 - a. Cause
 - b. Prevention
 - c. Removal
5. Embalming
 - a. Pre-embalming technique
 - b. Arterial
 - c. Cavity
 - d. Penetration
6. The arterial and venous systems
 - a. Superficial venous blood return
 - b. Deep venous blood return
 - c. Arteries employed in embalming
7. Violent deaths
 - a. Poisons
 - b. Gunshot wounds
 - c. Mutilated cases

- | | |
|---|--|
| <ul style="list-style-type: none"> 8. First call 9. Dressing of body 10. Analysis of cases <ul style="list-style-type: none"> a. Tissue gas and gas gangrene b. Edema c. Jaundice d. Frozen bodies e. Burns f. Communicable diseases g. Preparation for transportation h. Autopsies | <ul style="list-style-type: none"> 11. Embalming hygiene 12. Funeral directing and management <ul style="list-style-type: none"> a. Pricing b. Salesroom arrangement and selling c. Advertising d. Collections e. Funeral arrangements |
|---|--|

EMBALMING CLINICS

Throughout the year all students will be subject to call to attend cases made available through the courtesy of Twin City funeral directors, the local morgues, or other agencies. These clinics are under the direction of Mr. Hansen and practicing embalmers, regularly employed for the purpose. Every possible opportunity will be given students to observe the techniques of different embalmers and to assist in preparations. Students will gain additional practical experience through embalming bodies for subsequent medical, dental, and anatomical dissections.

PSYCHOLOGY

Wendell White, Ph.D., Associate Professor of Psychology.

24 hours. This course will present those principles of psychology most helpful to the prospective funeral director in dealing tactfully with the people he comes in contact with—especially persons who are under severe emotional stress.

PUBLIC HEALTH

The Minnesota State Department of Health staff will give a series of lectures arranged by the executive officer, Dr. A. J. Chesley, and the directors:

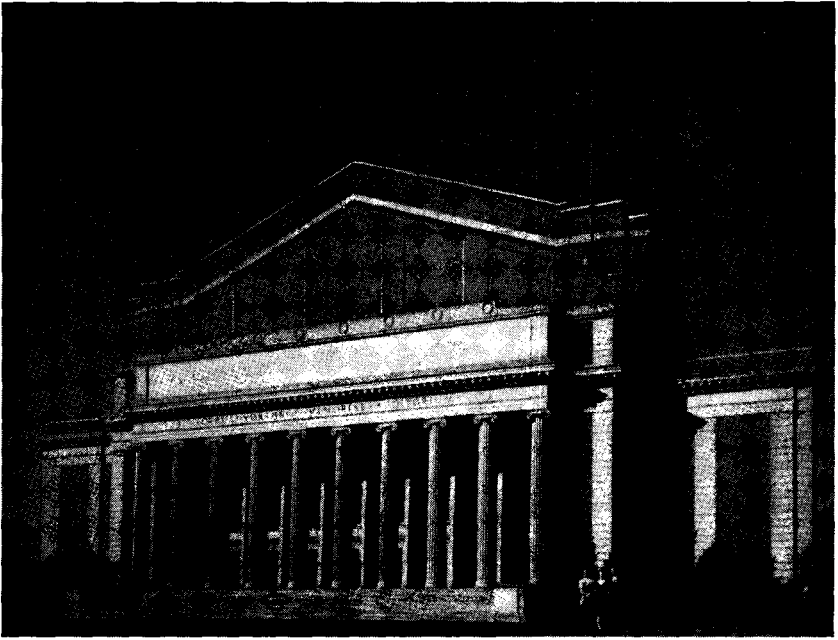
- Donald A. Dukelow, M.D., Director, Health Education
- Harold A. Whittaker, B.A., Director, Division of Sanitation
- R. R. Sullivan, M.D., Epidemiologist, Division of Venereal Diseases
- Gerda C. Pierson, Director, Division of Vital Statistics
- Viktor O. Wilson, M.D., Director, Division of Child Hygiene
- O. C. Pierson, Director, Division of Administration

36 hours. The purpose of this series of lectures is to set forth the basic principles of public health, the official federal, state, and local public health organizations for the protection of the public health and the powers and duties of such organizations, and the relations of embalmers and funeral directors to such activities. It offers the future embalmer and funeral director valuable orientation in his responsibilities for the health of his community and in his relationships with the local health boards and the State Department of Health. Presentation will be through lectures and motion pictures. Subjects of study will include:

- | | |
|--|---|
| <ul style="list-style-type: none"> 1. Public health laws and regulations 2. Preventable diseases 3. Public sanitation | <ul style="list-style-type: none"> 4. Venereal diseases 5. Vital statistics 6. Child hygiene |
|--|---|

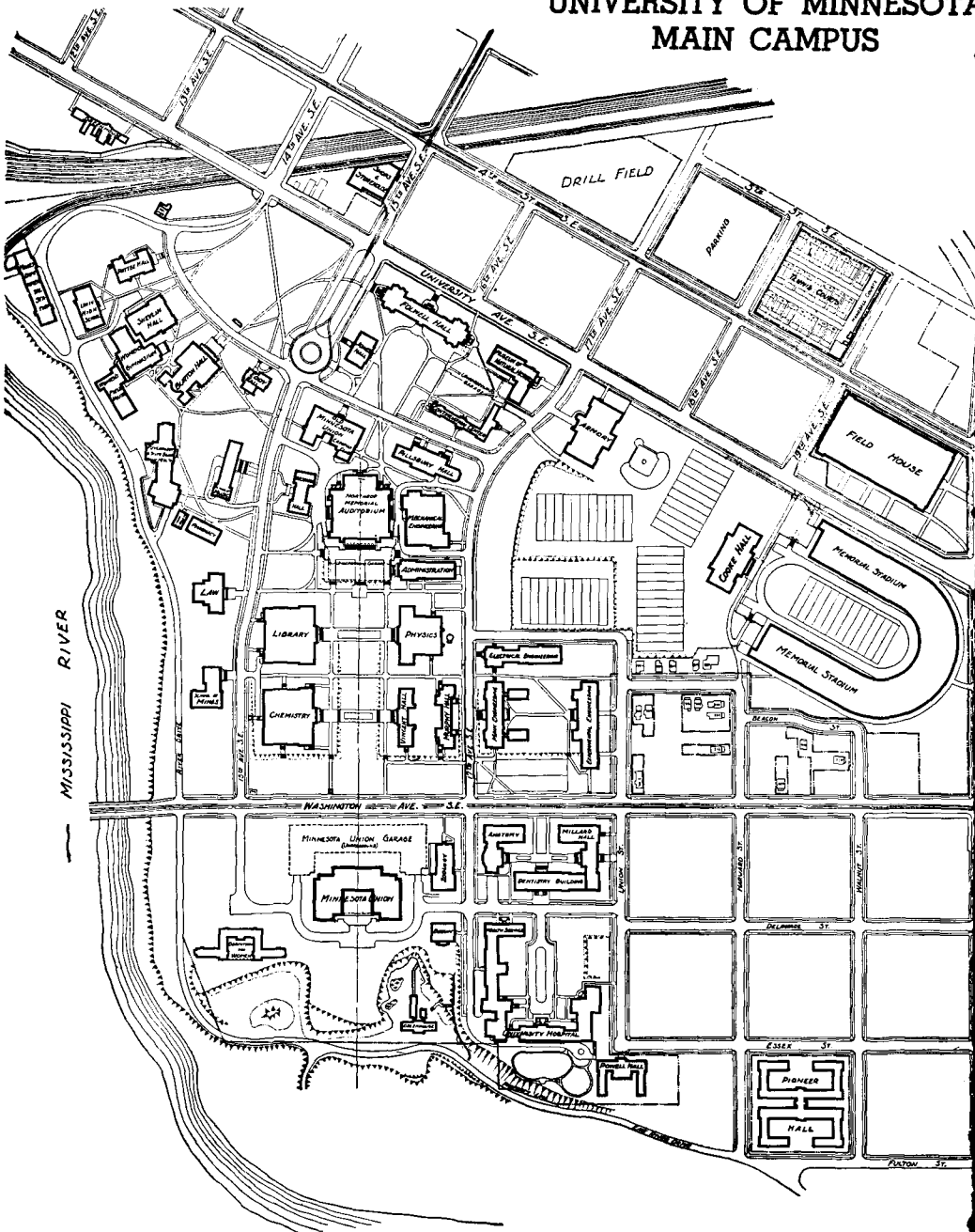
Correspondence should be addressed to

THE GENERAL EXTENSION DIVISION
 RICHARD R. PRICE, Director
 UNIVERSITY OF MINNESOTA
 MINNEAPOLIS, MINNESOTA



Northrop Memorial Auditorium

UNIVERSITY OF MINNESOTA MAIN CAMPUS



The Bulletin of the
UNIVERSITY OF MINNESOTA

SUPPLEMENT TO THE SUMMER SESSION BULLETIN

Accelerate Your Program
at the
UNIVERSITY OF MINNESOTA
1942 SUMMER SESSION



Your Country Needs Trained Men
Save from Three Months' to One Year's Time
Do Your Duty by Preparing Yourself Without Delay

ALL COURSES BEGIN JUNE 15

Volume XLV

Number 33

May 19, 1942

Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 12, 1918.

Here Is Your Opportunity To Speed Up Your College Training!

University Accelerates Program.—Four years of college work in three years to meet the war emergency can be accomplished through the new accelerated program of the University of Minnesota. By registering for this new program on or before June 16, 1942, a student can complete one and one-third college years in twelve months. Thus, a freshman, entering at the beginning of the 1942 Summer Session and continuing under the accelerated program, would complete a four-year course in June, 1945. Similarly, a sophomore could finish in August, 1944; a junior, in December, 1943; and a senior, in March, 1943.

Acceleration in All Fields.—The accelerated course is *compulsory* in the Medical School, the School of Dentistry, and the College of Pharmacy. It is *optional* in the Institute of Technology, the Law School, the College of Science, Literature, and the Arts, the College of Education, and the School of Business Administration. The College of Agriculture, Forestry, and Home Economics is also offering courses during the Summer Session which permit the student to accelerate his program to a limited extent. Actually, it is possible through Summer Session attendance for a student to accelerate his progress toward graduation in any field.

Special War Courses.—Students will also have opportunity through the regular program of the 1942 Summer Session to take special subjects designed for war training and for the study of post-war problems.

New Summer Courses Added.—The following courses of study will be offered in the various colleges and schools in *addition to those already listed in the 1942 Summer Session Bulletin*. For a schedule of class hours, consult the dean of the college concerned.

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

Advance registration dates for students in this college are June 2, 3, and 4. Regular Summer Session fees will be charged. The following courses have been added (for further information, see the Bulletin of the College of Science, Literature, and the Arts or the Summer Session Bulletin or consult the head of the department concerned):

First Term

Astronomy 20su. Navigation. Discussion of the basic facts of celestial navigation, in accordance with the specifications of the Army Air Corps. Mr. Luyten.
Instituto de Estudios Hispano-Americanos (Laboratory fee, \$40).
Spanish 22su. Practical Spanish. Mr. Cúneo, Mr. LeFort, and assistants.
Spanish 56su. Advanced Practical Spanish. Mr. Cúneo, Mr. LeFort, and assistants.
Portuguese 1su. Beginning Portuguese. (4 cred.; no prereq., but knowledge of Spanish and French desirable; TWThF III, MTWF IV.) Miss Kaltenbacher.

INSTITUTE OF TECHNOLOGY

See the Department of Preventive Medicine and Public Health, page 5, for special program in *public health engineering*.

Advance registration dates for students in the Institute of Technology are May 25 through May 29. Regular Summer Session fees will be charged each term except for students in the School of Architecture, who will pay fees on the same basis as during the academic year. The following courses have been added (for course descriptions, see the Bulletin of the Institute of Technology):

Aeronautical Engineering

First and Second Terms

Aero.E.3su. Aeronautics.
Aero.E.100su. Aerodynamics.
Aero.E.120-121su. Airplane Design.

Aero.E.141su. Aerodynamics Laboratory.
Aero.E.160su. Lighter-Than-Air Craft.

1942, and will bring together in an eleven weeks' term several of the fundamental courses in the regular public health engineering curriculum leading to a Master's degree. All courses will be of usual academic quality, and credit so earned will count toward a degree. The courses will consist of lectures, conferences, laboratory exercises, and field demonstrations. The facilities of the Division of Sanitation in the Minnesota Department of Health, as well as of local health departments, will be utilized for student teaching.

Courses available during this period will include the following: General Environmental Sanitation, Water Supply, Excreta and Waste Disposal, Food and Milk Sanitation, Public Health Engineering Administration, Elements of Preventive Medicine, and Public Health Administration.

Registrations will be limited to graduates in engineering or persons who have had suitable experience in the field of environmental sanitation. All inquiries should be directed to the Department of Preventive Medicine and Public Health, University of Minnesota, Minneapolis, Minnesota.

SCHOOL OF DENTISTRY

Students in dentistry will be required to begin their freshman, sophomore, junior, and senior years, respectively, with the summer quarter of 1942. A full quarter's work will be offered. Advance registration dates for students in the School of Dentistry are June 2, 3, and 4. Fees will be charged on the same basis as during the academic year.

COLLEGE OF EDUCATION

Advanced registration dates for students in this college are June 2, 3, and 4. Regular Summer Session fees will be charged each term. The following courses have been added:

First Term

Aviation Education. Two practical workshops, one for teachers and one for administrators, will give opportunity for collecting materials and planning courses for the important new emphasis on aviation education in the secondary schools. A complete demonstration program in aviation education will be available at University High School.

Physical Education 58su. Instructors' Course in First Aid. This course is designed to prepare instructors to teach the standard course in first aid. The regular Red Cross certificate will be issued to those who complete the course and the Red Cross requirements. Prerequisites for the course are a standard course in first aid and anatomy and physiology.

RESERVE OFFICERS' TRAINING CORPS

The Department of Military Science and Tactics is offering regular elementary and advanced courses during the 1942 Summer Session, beginning on June 15. The courses offered are as follows:

First and Second Terms

- 3su. Infantry drill and calisthenics, rifle marksmanship, organization of the coast artillery, coast artillery materiel. (No prerequisites; I MWF.)
- 6su. Basic gunnery and functioning of the range section for sea coast and anti-aircraft gunnery. Infantry drill and calisthenics. (Prerequisite: trigonometry; I MWF.)
- 153su. Gunnery and fire control for sea coast artillery, infantry drill, calisthenics. (Prerequisites: M.S.&T. 1-6 inclusive; I M, IV MTWTh.)
- 156su. Military law, military history, mess management, supply and procurement, leadership. (Prerequisites: 151-152-153; I M, IV MTWTh.)

For information on tuition and fees, consult the Summer Session Bulletin for regular Summer Session fees and the Bulletin of General Information for fee bases during the academic year.

For further details, see the Summer Session Bulletin and the bulletin of the college or school in which you are interested. Bulletins may be obtained from the Office of Admissions and Records, 104 Administration Building, or the Director of the Summer Session, 406 Administration Building, University of Minnesota, Minneapolis, Minnesota.

Students are advised to consult the office of the dean of the school or college in which they wish to register and to watch the official daily bulletin for additional announcements concerning the departments mentioned in this bulletin and other departments of the University.

School of Architecture

The offerings of the Summer Session will consist of approximately ten consecutive weeks of laboratory work. Attendance during the summer will enable students to shorten the present five-year curriculum of the School of Architecture.

AD I-II-III-IV. Architectural Design, Grades I, II, III, and IV. Mr. Jones and Mr. Cerny.
DP I-II-III. Drawing and Painting, Grades I, II, and III. Mr. Burton.
MI-I. Modeling, Grades I and II. Mr. Burton.

Civil Engineering

First and Second Terms

C.E.11su. Surveying. Mr. Boon. C.E.161su. Power. Mr. Bass.
C.E.14-15su. Surveying. Mr. Zelner.

Second Term (also offered in First Term)

C.E.31-32su. Stresses in Structures. Mr. Johnston.
C.E.130-131su. Statically Indeterminate Structures and Analysis of Bridges and Buildings.
Mr. Hughes.
C.E.141su. Reinforced Concrete. Mr. Andersen.
C.E.142su. Reinforced Concrete Design. Mr. Andersen.

Drawing and Descriptive Geometry

No changes. See the 1942 Summer Session Bulletin, pages 47 and 48.

Electrical Engineering

First and Second Terms

E.E.11su. Elements of Electrical Engineering. Mr. Larson.
E.E.36su. Electric Power. Mr. Saunders.
E.E.43su. Electric Power. Mr. Kuhlmann.
E.E.64su. Elements of Communication. Mr. Becklund.
E.E.111su. Junior Electrical Engineering. Mr. Muckenhirn.
E.E.112su. Junior Electrical Engineering Laboratory. Mr. Todd.
E.E.121su. Senior Electrical Engineering. Mr. Caverley.
E.E.122su. Senior Electrical Engineering Laboratory. Mr. Kuhlmann.
E.E.127su. Transient Electrical Phenomena. Mr. Bryant.
E.E.132su. Electrical Design. Mr. Kuhlmann.
E.E.141su. Central Stations. Mr. Johnson.
E.E.161su. Radio Communication. Mr. Webb.
E.E.164su. Electrical Communication. Mr. Becklund.

Mathematics and Mechanics

First and Second Terms

M.&M.24su. Calculus I: Differential. Mr. Priester, Mr. Herrick, Mr. Novak.
M.&M.128su. Strength of Materials. Mr. Miller.
M.&M.129su. Hydraulics. Mr. Stavnes.
M.&M.141su. Materials Testing Laboratory. Mr. Miller.
M.&M.143su. Hydraulics Laboratory. Mr. Stavnes.

First Term (also offered in Second Term)

M.&M.127su. Technical Mechanics: Dynamics. Mr. Wilcox.

Second Term

M.&M.25su. Calculus II: Integral. Mr. Herrick.
M.&M.85su. Strength of Materials.
M.&M.87su. Materials Testing Laboratory.

Mechanical Engineering

First and Second Terms

M.E.5su. Pattern Practice. Mr. Richards.
M.E.20su. Elementary Machine Design. Mr. Ryan.
M.E.22su. Mechanism. Mr. Ryan.
M.E.32su. Elementary Mechanical Laboratory (Aero.E.). Mr. Shoop.
M.E.33su. Elementary Mechanical Laboratory. Instructor to be announced.
M.E.40-41su. Heat Engines (E.E.). Mr. Summers.
M.E.121su. Machine Design. Mr. Ryan.
M.E.131su. Thermodynamics. Mr. Shoop.
M.E.142su. Heat-Power Engineering. Mr. Shoop.
M.E.150su. Internal Combustion Engines. Mr. Summers.
M.E.171su. Production Control. Instructor to be announced.
M.E.190su. Seminar. Mr. Summers.

Second Term (also offered in First Term)

- M.E.13su. Forging and Welding. Instructor to be announced.
M.E.17su. Machine Shop Practice (E.E., Prebus.). Instructor to be announced.
M.E.18su. Machine Shop Practice (Aero.E.). Instructor to be announced.
M.E.71-72su. Machine Shop Practice (M.E.). Instructor to be announced.

Inorganic Chemistry

No changes. See Summer Session Bulletin, pages 51 and 52.

Analytical Chemistry

First Term

- 124su. Advanced Analytical Chemistry. Mr. Geiger.

Organic Chemistry

First Term

- 51su. Elementary Organic Chemistry. Mr. Lauer.

Second Term

- 52su. Elementary Organic Chemistry. Mr. Arnold.

Physical Chemistry

First Term

- 101su. Physical Chemistry. Mr. MacDougall and Mr. Hull.
102su. Physical Chemistry. Mr. Hull.
104su. Physical Chemistry Laboratory. Mr. Hull.
105su. Physical Chemistry Laboratory. Mr. Hull.

Second Term

- 102su. Physical Chemistry. Mr. Livingston and Mr. Hull.
103su. Physical Chemistry. Mr. Livingston and Mr. Hull.
105su. Physical Chemistry Laboratory. Mr. Hull.
106su. Physical Chemistry Laboratory. Mr. Hull.

Chemical Engineering

First Term (June 15 to July 17)

- 121su. Chemical Engineering Economics. Mr. Montonna.

School of Mines and Metallurgy

Offerings cancelled.

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

An attempt will be made to help students in agriculture, forestry, and home economics to accelerate their programs in every way possible. Students are requested to see the Summer Session Bulletin for a list of the courses to be offered during the summer of 1942 and to consult with the dean and advisers. Regular Summer Session fees will be charged each term.

COLLEGE OF PHARMACY

The College of Pharmacy will accelerate its program for all classes beginning the summer of 1942. A full quarter's work will be offered this summer. Fees will be charged on the same basis as during the academic year. This program means that a student entering at the beginning of the summer quarter, 1942, will pursue his studies for twelve consecutive quarters and, if he encounters no scholastic difficulties, may complete the requirements for the bachelor of science in pharmacy by June, 1945. The length in weeks and the quality of the instruction will be equal in every respect to that now offered in the pharmacy course of four years of three quarters each.

Those students who will have completed the required and elective courses contained in the first year of the pharmacy curriculum by June, 1942, should plan to enroll in the College of Pharmacy as sophomores at the beginning of the 1942 summer quarter, as no beginning sophomores will be admitted in the fall of 1942. A junior and a senior year of three quarters each will also start at the beginning of the 1942 summer quarter, the juniors entering their senior year at the beginning of the spring quarter, 1943, and the seniors graduating in March, 1943. Advance registration dates for students in the College of Pharmacy who were in attendance during the spring quarter are June 2, 3, and 4.

LAW SCHOOL

Courses will be offered during the 1942 Summer Session for both beginning and advanced students in the Law School. Fees will be charged on the same basis as during the academic year. Students with two years of college work are admitted to courses totaling four years for the degrees of B.S. and LL.B. By attending Summer Sessions, these courses may be completed in three calendar years. Students with a B.A. or equivalent degree are admitted to a three-year course for the LL.B. By attending Summer Sessions, this course may be completed in two-and-one-quarter calendar years. Advance registration dates for students in the Law School are June 1 through June 5. The following subjects are scheduled for the summer quarter (see Law School Bulletin for further details):

Contracts	Mortgages	Modern Social Legislation
Judicial Remedies	Wills	Taxation
Equity	Restitution (Equity III, Quasi-Contracts)	Judicial Administration
Security Transactions	(Suretyship, Chattel Mortgages, Conditional Sales, etc.)	

SCHOOL OF BUSINESS ADMINISTRATION

Advanced registration dates for students in this school are June 2, 3, and 4. Regular Summer Session fees will be charged each term. The following courses have been added (for course descriptions, see the Bulletin of the School of Business Administration):

First Term

Econ.33su. Secretarial Training: Typewriting. Miss Donaldson.
Econ.39su. Secretarial Training: Intermediate Shorthand. Miss Donaldson.
B.A.91su. Tabulating Equipment Laboratory. Mr. Boddy.
B.A.130su. Survey of Cost Accounting. Mr. Ostlund.
B.A.184su. Scientific Management in Industry. Mr. Filipetti.

Second Term

B.A.133su. Standard Costs. Mr. Ostlund.
B.A.170su. Motion Economy. Mr. Thompson.
B.A.171su. Production Standards. Mr. Thompson.
B.A.180Dsu. Senior Topics: Personnel Administration. Mr. Yoder.
B.A.180Gsu. Senior Topics: Production. Instructor to be announced.

The School of Business Administration has for many years provided specialized training in the fields of production and personnel management. Because of present shortages in these two fields both in military service and in war industries, the School of Business Administration has now undertaken a special program designed to facilitate and speed the preparation of properly qualified graduate students. The curricula lead to the M.B.A. degree and provide instruction in either or both of the specialized fields of production management and personnel management. Successful completion of the program will prepare students to take their place in a supervisory capacity in plants producing war materials or in the military services. For a list of the required courses and further information about the program, see the special bulletin entitled *Special War and Defense Training in Production Management and Personnel Management*, Vol. XLV, Number 29.

MEDICAL SCHOOL

A full quarter's work will be offered by the Medical School. Fees will be charged on the same basis as during the academic year. Freshmen, sophomores, juniors, and seniors are required to start the work of their respective years beginning with the summer quarter of 1942. Advanced registration dates for students in the Medical School are June 1 and 2. (See the Bulletin of the Medical School.)

Department of Preventive Medicine and Public Health

Public Health Engineering.—During the coming summer an intensive course in public health engineering will be offered at the University of Minnesota under the auspices of the Department of Preventive Medicine and Public Health. Regular Summer Session fees will be charged each term. This course, which covers both terms, will run from June 15 to August 28,

The Bulletin of the
UNIVERSITY of MINNESOTA

The College of Pharmacy Announcement
for the Years 1942-1944



Volume XLV, Number 35

May 25, 1942

*Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota.
Accepted for mailing at special rate of postage provided for in Section 1103, Act of
October 3, 1917, authorized July 12, 1918*

ADMINISTRATIVE OFFICERS

Walter C. Coffey, M.S., LL.D., President

Charles H. Rogers, D.Sc., Dean of the College of Pharmacy and Professor of Pharmaceutical Chemistry

GENERAL INFORMATION

The fiftieth course of the College of Pharmacy begins June 17, 1942.

ANNOUNCEMENT OF ACCELERATED COURSE IN PHARMACY

The College of Pharmacy will accelerate its program for all classes beginning the summer of 1942. This means that a student entering at the beginning of the summer quarter, 1942, will pursue his studies for twelve consecutive quarters and, if he encounters no scholastic difficulties, may complete the requirements for the B.S. in pharmacy degree by June, 1945. The length in weeks and quality of the instruction will be equal in every respect to that now offered in the Pharmacy course of four years of three quarters each which will be discontinued for the duration of the war. Application for admission forms may be obtained from the director of admissions and records. These should be completed and returned as soon as possible. Advance registration dates for students in the College of Pharmacy who were in attendance during the spring quarter are June 2, 3, 4. New entering students will register for the summer quarter on June 15 and 16. Summer quarter classes begin June 17.

Those students who will have completed the required and elective courses contained in the first year of the Pharmacy curriculum by June, 1942, should plan to enroll in the College of Pharmacy as sophomores at the beginning of the 1942 summer quarter as no beginning sophomores will be admitted in the fall of 1942.

Special attention of those high school students contemplating entering the College of Pharmacy *with advanced academic standing* is directed to the following statement: In the past, a number of high school students have pursued the required and elective subjects of the first year of the Pharmacy curriculum at some recognized school other than the University of Minnesota and then enrolled the following September with advanced academic standing as sophomores in the University of Minnesota College of Pharmacy. Students wanting to do so this coming year should enroll at the beginning of the summer at either some academic college that is on an accelerated basis or in the College of Pharmacy of the University of Minnesota. This is necessary because freshmen entering the College of Pharmacy at the beginning of the 1942 summer quarter will commence their sophomore studies at the beginning of the spring quarter (March), 1943, and if a student wishes to enter with advanced academic standing when the sophomore professional work begins, he must have completed the three quarters of freshman studies by the latter part of March, 1943. Freshmen will be admitted only at the beginning of the summer quarter on June 17, 1942.

ADMISSION BY CERTIFICATE

Diplomas or other evidences of the completion of an accredited four-year high school course, or of its educational equivalent, are required for admission. For details concerning the requirements for admission consult the Bulletin of General Information. The high school course must have included:

A major in Group A, English
A major or a minor in Group D, Mathematics
One unit of physics.

One unit of high school physics, or its equivalent, is prerequisite to the professional subjects of the sophomore year in the College of Pharmacy. Therefore, high school students are urged to include this subject as part of their high school course. Students who have not had one unit of high school physics must complete General Physics 1a, 2a and 3a (total 12 credits) before they will be permitted to register for sophomore subjects in this college.

Credits earned in college physics will satisfy the entrance requirement of one unit of high school physics. They may also be applied toward the required 21 credits of academic electives of the first year.

Students entering the College of Pharmacy with advanced standing must meet the physics requirement. Their individual cases will be considered by the Students' Work Committee.

Prospective students in pharmacy are advised to include in their high school courses higher algebra, solid geometry, Latin, botany, chemistry, and physiology, as some knowledge of these subjects will facilitate their professional study.

ADMISSION BY EXAMINATION

Students who do not meet the requirements for admission by certificate may try for admission on the basis of entrance tests as described in the Bulletin of General Information.

FRESHMAN STUDENTS

All applicants for admission or for advanced standing should request the high schools or colleges they attended to send complete transcripts of their records to the director of admissions and records of the University as early as possible. A student's credentials will not be reviewed unless a completed official application form has been filed by him with the director of admissions and records. Applicants will then be notified of their admission status and directions for registration sent them.

STUDENTS WITH ADVANCED STANDING

Applicants for advanced standing must pass the entrance examinations or present the usual equivalents. They must furnish satisfactory evidence of time spent and subjects covered in previous professional studies at accredited institutions, and must pass the examinations of all departments in which they desire credit, if such examinations are deemed necessary by the professors in charge. Students will not be permitted to substitute private work in any branch for the regular course work.

Students who have completed a minimum total of 45 academic quarter credits, which include a minimum of 9 credits of composition, 10 credits of general inorganic chemistry, 5 credits of qualitative chemistry, and 21 credits of academic electives, e.g., modern foreign language, college physics, zoology, mathematics, political science, etc., acceptable to the Students' Work Committee, will be admitted with advanced standing to the second year of the pharmacy course. These credits must have been earned in the College of Science, Literature, and the Arts at the University of Minnesota, or at any junior college or academic college of equal standing. Official transcripts will be evaluated by the office of admissions and records only when accompanied by a completed Application for Admission form.

UNCLASSIFIED STUDENTS

Persons meeting the entrance requirements and desiring to do less than the work of the regular course may be admitted as unclassified or special students, provided laboratory space is available. Work completed satisfactorily will be credited, should the student

subsequently enter the regular course. Registered pharmacists who desire to pursue the work of any one or more of the courses offered in the curriculum may do so with the approval of the dean.

EXAMINATIONS AND STANDING

Examinations are held during the last week of each quarter, and are supplementary to the written and practical tests that are held at frequent intervals during the year and, with them, form largely the basis of final determination of fitness for promotion or graduation.

The standing of students is indicated by the letters A, B, C, D (A highest, D lowest passing mark), E (condition), I (incomplete), and F (failure). Conditions may be removed as indicated below. An *incomplete* not removed within the thirty days of the first month of the student's next quarter in college becomes a *condition*. The Students' Work Committee may extend this time limit in special cases.

In order to become eligible for final examinations, students are required to attend at least seven eighths of the lectures in each course. This does not apply to laboratory courses, which must be taken in full.

Students having conditions in more than two major or in more than three minor subjects of the first year cannot enter upon the second year's work.

Examinations for the removal of conditions will be given at the beginning of each quarter. Announcement of these examinations will appear in the Bulletin of General Information and the Official Daily Bulletin. Conditioned students are required to inform themselves as to these dates as soon as they learn that they are conditioned, as no other notice is given. A fee of one dollar is charged for a condition examination. Failure to pass the condition examination will necessitate a repetition of the subject. Students who carry a condition into a succeeding year and then fail the condition examination will find conflicts between lecture or laboratory hours. In such cases they must give preference to the lower course.

Absences will not be excused unless satisfactory reasons are given. Habitual absence without a satisfactory excuse, continued indifference to study, or persistently poor scholarship may subject the student to probation, or temporary or permanent suspension.

FEEES AND EXPENSES

The quarterly tuition fee of \$37 for resident students and \$54 for nonresident students is payable before the beginning of each quarter. Certificates entitling the student to admission to classes will not be issued until fees have been paid.

Tuition fee (per quarter)	
Residents of Minnesota.....	\$37.00
Nonresidents	54.00
Incidental fee (per quarter).....	9.00
Deposit fee (first quarter only).....	10.00
Special fees:	
Examination for removal of condition.....	1.00
Examination for credits (after the first 6 weeks in residence).....	5.00
Special examination	5.00
Chemistry deposit	5.00
Laboratory fees—for individual courses. The amounts are specified in the course announcements.	
Graduation fee (including small diploma).....	7.50

Students registered in Dispensing Pharmacy are required to wear white coats, to be purchased at their own expense.

Students desiring to take special work may pay fees of \$1.75 per clock hour for residents and \$2.50 per clock hour for nonresidents except for academic courses, for

which the fee is \$3.50 per credit hour for residents and \$5 per credit hour for non-residents.

Privilege fees.—The fee for the privilege of late registration or late payment of fees is \$2 through the third day of classes. On the fourth day the fee is \$2.50 and then increases 50 cents per day to a maximum of \$5. The fee for late change of registration is \$2.

GRADUATION REQUIREMENTS

Regular attendance at lectures, recitations, and laboratory exercises is required. Students will not be permitted to present themselves for final examinations unless they have been in attendance upon at least seven eighths of the total work of the course for which they have matriculated.

Every person upon whom any degree is conferred must be of good moral character; must have completed the required lecture and laboratory courses; and must have passed examinations in the subjects required for graduation. In order to become a candidate for a degree, a student must complete the work of the senior year in residence.

PHARMACY LAW REQUIREMENT

Section 10 of the Pharmacy Laws of the State of Minnesota, as amended by the Legislature on March 28, 1941, reads as follows:

To be entitled to examination by the State Board as a pharmacist, the applicant shall be a citizen of the United States, of good moral character, at least twenty-one years of age, and shall be a graduate of the College of Pharmacy of the University of Minnesota or of a college or school of pharmacy in good standing of which the Board shall be the judge, and shall have at least one year of practical experience in a pharmacy.

On July 18, 1941, the Minnesota State Board of Pharmacy issued the following regulation on above passage:

Only graduates of the College of Pharmacy of the University of Minnesota and graduates of other schools and colleges of pharmacy accredited by the American Council on Pharmaceutical Education will be eligible for licensure examination.

The College of Pharmacy of the University of Minnesota is not only specifically named in the law but it is also accredited by the American Council on Pharmaceutical Education.

In January, 1940, the Minnesota State Board of Pharmacy issued a regulation to the effect that an official or certified transcript of scholastic work must accompany the application for examination for licensure to practice pharmacy in this state. Transcripts of Minnesota graduates may be obtained from the office of admissions and records of the University. Requests for transcripts should be made not later than ten days prior to the date upon which the application is to be filed with the Board of Pharmacy. No person will be charged for the transcript unless three transcripts have been issued previously to him. A fee of fifty cents will then be charged.

STATE BOARD OF PHARMACY

The State Board of Pharmacy meets at the college at least twice each year to examine candidates for registration. For information concerning the State Board examinations, address Secretary of the State Board of Pharmacy, 3965 Minnehaha Avenue South, Minneapolis, Minnesota.

MEDICINAL PLANT LABORATORY AND GARDEN

The facilities of the medicinal plant garden, plant laboratory, and conservatory afford opportunity for instruction in methods of cultivating, collecting, preparing, drying, and milling many official and nonofficial drugs. Approximately six hundred species of plants

of medicinal and economic importance grown in the garden and greenhouses provide ample and varied material for study of the gross anatomical, histological, and chemical characteristics of these plants, for the preparation of herbarium specimens, for research in medicinal plant cultivation, etc.

DISPENSARY PRESCRIPTION PRACTICE

Practical experience in dispensing is obtained in the pharmacy of the University of Minnesota Hospitals where, under supervision, the students compound prescriptions written by the physicians in the University of Minnesota Hospitals, Outpatient Department, and Students' Health Service. During the past year more than eighty thousand formulated prescriptions were compounded.

SPECIAL LECTURES

From time to time throughout the school year, outstanding men in the fields of pharmacy and related sciences address the students of the College of Pharmacy. Some of the subjects covered by these lectures are allergy, endocrinology, vitamins, and business administration. Students are required to attend these lectures.

MELENDY MEMORIAL LECTURES

Annually some pharmacist of national reputation will deliver a lecture at the College of Pharmacy on a subject intended to advance the interests of professional pharmacy. This lectureship has been made possible by the Samuel W. Melendy Memorial Fund.

PHARMACEUTICAL EDUCATIONAL TRIP

Once during the academic year, usually during the spring vacation, an opportunity is afforded students in the College of Pharmacy to visit the laboratories of at least one reputable pharmaceutical or biological manufacturer. Students are urged to make at least one of these trips at some time during their four years in college. These visitations have been discontinued for the duration of the war.

ELECTIVES IN OTHER COLLEGES OF THE UNIVERSITY

All the facilities of the University are open to students of this college. Therefore, students having the necessary prerequisites may elect subjects in other colleges of the University, if such election does not interfere with the required work in the College of Pharmacy. Subjects elected must be approved by the dean.

TEXTBOOKS

Textbooks used in all courses may be obtained after coming to the University.

STATE PHARMACEUTICAL ASSOCIATION SCHOLARSHIP AND GRADUATE FELLOWSHIP

The Minnesota State Pharmaceutical Association awards annually \$105 in cash and a token to that student who is a citizen of the United States and who has earned the highest general average rating at the completion of the first two years of technical pharmaceutical work up to ten days before Cap and Gown Day and who intends to become a candidate for the degree B.S. in pharmacy from this college. If the student receiving this award should fail to return to the college the following year to complete his senior work, the said sum will be awarded to the student next highest in standing who also meets the other requirements.

The Minnesota State Pharmaceutical Association Graduate Fellowship was established in 1931 to foster advanced work and research in the scientific and practical fields of pharmacy and related arts and sciences and to offer opportunities for graduate work

toward higher degrees in pharmacy to sufficiently qualified graduates of the College of Pharmacy of the University of Minnesota. This fellowship carries free tuition and \$500 annually. The appointment of the fellow is in charge of the faculty of the College of Pharmacy.

SAMUEL W. MELENDY MEMORIAL FELLOWSHIPS AND SCHOLARSHIPS

Two \$725 graduate fellowships, without tuition exemption, have been established. These graduate fellowships are intended to stimulate study at the graduate level and to further contributions to scientific pharmaceutical literature. Applications should be made to the dean of the College of Pharmacy.

Seven \$150 scholarships, without tuition exemption, have been established for undergraduate students in the College of Pharmacy. Three of these scholarships are available to sophomores, two are available to juniors, and two are available to seniors. The bases upon which these scholarships will be awarded are: (1) outstanding scholarship in academic and professional courses of study of the preceding year; and (2) character, personality, and general outstanding qualities of leadership. The purpose of these scholarships is to encourage and give recognition to high scholarship.

FAIRCHILD SCHOLARSHIP

Mr. Samuel W. Fairchild offers a scholarship in the sum of \$500 to be awarded to the student in any of the colleges holding membership in the American Association of Colleges of Pharmacy who has graduated from any of the association colleges' four-year courses and who has won the competitive examination provided as a preliminary to graduate work in pharmacy. Full particulars may be had from the dean of the college.

KAPPA EPSILON PRIZE

The Alumnae Chapter of Kappa Epsilon, national pharmacy sorority, offers the interest on \$425 as a prize to the Kappa Epsilon student who has earned the highest scholastic average at the end of four years. The sum is to be used to defray the expenses of the State Board Examination and registration.

LEHN AND FINK GOLD MEDAL

Lehn and Fink Products Corporation, of New York City, awards annually a gold medal to that student in the College of Pharmacy who graduates with the degree B.S. in pharmacy and who has earned the highest general average rating during the four years of undergraduate study.

WULLING CLUB KEY

The Wulling Club of the College of Pharmacy awards annually an appropriate gold key to that student in the College of Pharmacy who graduates with the degree B.S. in pharmacy and who has earned the second highest general average rating during the four years of undergraduate study.

COMMUNICATIONS

Communications relating to registration or advanced standing should be addressed to the office of admissions and records, University of Minnesota, Minneapolis, Minnesota. Official transcripts for advanced standing will be evaluated by the office of admissions and records only when accompanied by a completed Application for Admission form. All other inquiries should be addressed to Dean Charles H. Rogers, College of Pharmacy, University of Minnesota, Minneapolis, Minnesota.

For further information, see the Bulletin of General Information.

COURSES OF STUDY

The College of Pharmacy offers one four-year course in Pharmacy and one optional combined five-year course in Pharmacy and Business Administration.

The Graduate School offers courses in pharmacy, pharmaceutical chemistry, and pharmacognosy.

FOUR-YEAR COURSE

The College of Pharmacy offers one undergraduate course of four years' duration leading to the degree bachelor of science in pharmacy. This course includes one year of work in certain subjects in the College of Science, Literature, and the Arts, or other college of equal standing. See Announcement of Accelerated Course in Pharmacy on page 2.

CURRICULUM

FOUR-YEAR COURSE

First Year

SUMMARY OF CLOCK HOURS AND QUARTER CREDIT HOURS

Course	Didactic	Laboratory	Total	Credit Hours
First Quarter (12 weeks)				
Pharmacy 1f (Orientation and History of Pharmacy).....	24	0	24	2
General Inorganic Chemistry 6f.....	36	72	108	5
Freshman Composition 4f.....	36	0	36	3
Academic electives*	72	36	108	7
Military or Naval Science and Tactics†.....	.....	.....	.....	.....
Total	168	108	276	17
Second Quarter (11 weeks)				
General Inorganic Chemistry 7w.....	33	66	99	5
Freshman Composition 5w.....	33	0	33	3
Academic electives*	66	33	99	7
Military or Naval Science and Tactics†.....	.....	.....	.....	.....
Total	132	99	231	15
Third Quarter (11 weeks)				
Qualitative Chemical Analysis 12s.....	33	66	99	5
Freshman Composition 6s.....	33	0	33	3
Academic electives*	66	33	99	7
Military or Naval Science and Tactics†.....	.....	.....	.....	.....
Total	132	99	231	15
Total for first year	432	306	738	47

* With the permission of his adviser, a student may elect at the hours indicated or available, two of the following courses for a required minimum total of 7 credits per quarter (21 for academic year): Physics (4 cred.), Zoology (3 cred.), Chemical or Elementary German (4 or 5 cred.), Political Science (3 cred.), and other courses approved by the Students' Work Committee. (For hours, see Combined Class Schedule.) The courses selected must be continued for at least the minimum number of credit hours for which credit is given.

Those students who have not met the entrance requirement of one unit of high school physics must select Physics 1af, 2aw, 3as (12 cred.) as one of their academic electives. The satisfactory completion of these courses in physics will satisfy the entrance requirement. They may also be applied toward the 21 academic electives.

† Optional—1 and 1½ credits, respectively, per quarter.

Second Year

SUMMARY OF CLOCK HOURS AND QUARTER CREDIT HOURS

Course	Didactic	Laboratory	Total	Credit Hours
First Quarter (12 weeks)				
Pharmacy 1f*				
Pharmacy 2f	48	36	84	5
Pharmacy 5f	12	0	12	1
Pharmaceutical Chemistry 1f	24	36	60	3
Pharmacognosy 1f	12	36	48	2
Botany 17f	24	48	72	3
Preventive Medicine 3f	24	0	24	2
Total	144	156	300	16
Second Quarter (11 weeks)				
Pharmacy 3w	33	66	99	5
Pharmaceutical Chemistry 2w	22	33	55	3
Pharmacognosy 2w	11	33	44	2
Botany 18w	22	44	66	3
Organic Chemistry 1w	55	44	99	4
Total	143	220	363	17
Third Quarter (11 weeks)				
Pharmacy 4s	33	66	99	5
Pharmaceutical Chemistry 3s	22	33	55	3
Pharmacognosy 3s	11	33	44	2
Botany 19s	22	44	66	3
Organic Chemistry 2s	55	44	99	4
Total	143	220	363	17
Total for second year	430	596	1,026	50

* Students entering with advanced standing must take Pharmacy 1f concurrently with their sophomore work.

Third Year

SUMMARY OF CLOCK HOURS AND QUARTER CREDIT HOURS

Course	Didactic	Laboratory	Total	Credit Hours
First Quarter (12 weeks)				
Pharmacognosy 54f	36	72	108	5
Pharmacognosy 55f	36	0	36	3
Bacteriology 52f	36	72	108	5
Economics 10f	36	0	36	3
Total	144	144	288	16
Second Quarter (11 weeks)				
Pharmacy 56w	22	66	88	4
Pharmaceutical Chemistry 54w (Quantitative)	22	66	88	4
Pharmacognosy 56w	33	0	33	3
Pharmacognosy 58w (Biological Products)	22	0	22	2
Economics 30w	33	0	33	3
Total	132	132	264	16
Third Quarter (11 weeks)				
Pharmacy 57s	22	66	88	4
Pharmaceutical Chemistry 55s (Quantitative)	11	66	77	3
Pharmacognosy 57s	33	0	33	3
Pharmacognosy 59s .....	.....	.....	.....	.....
Business Administration 67s	33	0	33	3
Physiology 4s	33	33	66	4
Total	132	165	297	17
Total for third year	408	441	849	49

Fourth Year

SUMMARY OF CLOCK HOURS AND QUARTER CREDIT HOURS

Course	Didactic	Laboratory	Total	Credit Hours
First Quarter (12 weeks)				
Pharmacy 58f (Dispensing Pharmacy).....	24	72	96	4
Pharmacy 61f* (Dispensary Prescription Practice).....	0	8	8	.....
Pharmaceutical Chemistry 56f (Quantitative)	24	72	96	4
Pharmaceutical Chemistry 58f (Pharmaceutical Biochemistry).....	24	36	60	3
Pharmaceutical Chemistry 161f (Organic Medicinal Products).....	36	0	36	3
Pharmacology 2f	36	36	72	4
Total	144	224	368	18
Second Quarter (11 weeks)				
Pharmacy 59w (Dispensing Pharmacy).....	22	66	88	4
Pharmacy 62w* (Dispensary Prescription Practice).....	0	8	8	.....
Pharmacy 64w (Pharmaceutical Jurisprudence).....	33	0	33	3
Pharmacy 65w (Cosmetics)	11	33	44	2
Pharmacy 70w (First Aid).....	11	11	22	1
Pharmaceutical Chemistry 162w (Organic Medicinal Products).....	33	0	33	3
Professional electives†	11	66	77	3
Total	121	184	305	16
Third Quarter (11 weeks)				
Pharmacy 60s (Dispensing Pharmacy).....	22	66	88	4
Pharmacy 63s* (Dispensary Prescription Practice).....	0	8	8	1
Pharmacy 71s (First Aid).....	11	11	22	1
Pharmaceutical Chemistry 163s (Organic Medicinal Products).....	33	0	33	3
Preventive Medicine and Public Health 51s (Community Hygiene)	33	0	33	3
Professional electives†	11	66	77	3
Total	110	151	261	15
Total for fourth year.....	375	559	934	49
Grand total	1,645	1,902	3,547	193

* One credit for three quarters' work.

† Professional electives:

Pharm. 66w-67s (Industrial Manufacturing Pharmacy)—6 cred.

Pharm. 68w-69s (Hospital Pharmacy)—6 cred.

Pharm. Chem. 59w-60s (Pharmaceutical Technology)—6 cred.

Pharm. Chem. 164w-165s (Food and Drug Analysis)—6 cred.

Pharmacog. 60w-61s (Pharmacognosy and Pharmacology-Histology)—6 cred.

Pharmacog. 162w-163s (Biological Assay of Drugs)—6 cred.

Elementary Organic Chemistry 153s—5 cred. (See pages 17 and 19)

OPTIONAL FIVE-YEAR COMBINED COURSE

The College of Pharmacy and the School of Business Administration offer an optional combined five-year course in Pharmacy and Business Administration leading to the degrees bachelor of science in pharmacy and bachelor of business administration. This optional course is open only to those students who register in the College of Pharmacy either with or without advanced standing and who can present evidence of better than average ability. Students who are permitted to register for this course of study must take the professional and business administrative courses in the sequences in which they are offered. This course has also been accelerated.

OUTLINE OF COURSES AND THEIR CREDIT VALUES

First Year

Course	Credits
Freshman Composition 4f-5w-6s.....	9
General Inorganic Chemistry 6f-7w.....	10
Qualitative Chemical Analysis 12s.....	5
Economics 8f-9w (General Economics).....	6
Economics 28s (Business Law).....	3
Academic electives f,w,s.....	12
Total	45

Second Year

Pharmacy 1f	2
Pharmacy 2f-3w-4s	15
Pharmacy 5f	1
Pharmaceutical Chemistry 1f-2w-3s.....	9
Organic Chemistry 1f-2w.....	8
Economics 20w (Elements of Accounting).....	3
Economics 25s (Principles of Accounting).....	3
Preventive Medicine 3w.....	2
Psychology 1s,2s (General Psychology).....	6
Total	49

Third Year

Pharmacy 56w	4
Pharmaceutical Chemistry 54w-55s (Quantitative).....	7
Pharmacognosy 1f-2w-3s	6
Bacteriology 52f	5
Botany 17f-18w-19s	9
B.A. 58w (Elements of Public Finance).....	3
B.A. 70f (Statistics Survey).....	3
B.A. 77s (Survey in Marketing).....	3
B.A. 89f (Production Management).....	3
Physiology 4s	4
Total	47

THE COLLEGE OF PHARMACY

Fourth Year

Course	Credits
Pharmacy 57s	4
Pharmacy 65f (Cosmetics)	2
Pharmacy 64w (Pharmaceutical Jurisprudence).....	3
Pharmaceutical Chemistry 56f.....	4
Pharmacognosy 54f	5
Pharmacognosy 55f-56w-57s	9
Pharmacognosy 58w (Biological Products).....	2
Professional electives w,s†.....	6
Preventive Medicine and Public Health 51s.....	3
B.A. 112f (Business Statistics).....	3
B.A. 130f (Cost Accounting).....	3
B.A. 155w (Corporation Finance).....	3
B.A. 142s (Money and Banking).....	3
Total	50

Fifth Year

Pharmacy 58f-59w-60s (Dispensing Pharmacy).....	12
Pharmacy 61f-62w-63s (Dispensary Prescription Practice).....	1
Pharmacy 70w-71s (First Aid).....	1
Pharmaceutical Chemistry 58w (Pharmaceutical Biochemistry).....	3
Pharmaceutical Chemistry 161f-162w-163s (Organic Medicinal Products).....	9
B.A. 101f-102w (Advanced General Economics).....	6
B.A. 180Cf-181Cw-182Cs (Senior Topics: Marketing).....	9
B.A. 88w (Advertising).....	3
B.A. 69s (Retail Store Management).....	3
Economics 149s (Business Cycles).....	3
Economics 161s (Labor Problems and Trade Unionism).....	3
Pharmacology 2f	4
Total	57
Grand total	248

† Professional electives:

- Pharm. 66w-67s (Industrial Manufacturing Pharmacy)—6 cred.
- Pharm. 68w-69s (Hospital Pharmacy)—6 cred.
- Pharm. Chem. 59w-60s (Pharmaceutical Technology)—6 cred.
- Pharm. Chem. 164w-165s (Food and Drug Analysis)—6 cred.
- Elementary Organic Chemistry 153s—5 cred. (See pages 17 and 19)
- Pharmacog. 60w-61s (Pharmacognosy and Pharmaco-Histology)—6 cred.
- Pharmacog. 162w-163s (Biological Assay of Drugs)—6 cred.

DESCRIPTION OF COURSES

COURSES OFFERED IN THE COLLEGE OF PHARMACY

Following each course is a statement in parentheses, of credits, classes of students eligible, and prerequisites. Thus (3 cred.; jr., sr., grad.; prereq. Pharm. 3) means that the course carries three credits, is open to juniors, seniors, and graduate students, and demands Pharmacy 3 as a prerequisite.

PHARMACY

Professors Gustav Bachman, Phm.D., Charles H. Rogers, D.Sc.; Assistant Professor Charles V. Netz, Ph.D.; Special Lecturers Richard H. Bachelder, LL.B., Norman J. Rose, M.D.; Instructors Ragnar Almin, B.S. in Phm., Hallie Bruce, Phm.G.; Teaching Assistants Frank E. DiGangi, M.S., Reid Micklesen, B.S. in Phm., Edwin Olson, B.S. in Phm., B.B.A.; Head Pharmacist Stanley H. Nicholson, Phm.G.

- 1f. Orientation and History of Pharmacy. This course consists of a general survey and history of the field of pharmacy and related sciences. It includes a cursory description of the courses offered in the pharmacy curriculum. Their application to, and use in, the practice of pharmacy is emphasized. The histories, past accomplishments, and aims of some of the state and national pharmaceutical, medical, and chemical organizations are presented. (2 cred.; fr., soph.; no prereq.) Mr. Rogers.
- 2f. Pharmaceutical Calculations. The didactic portion of this course embraces weights and measures; thermometry and calorimetry; specific gravity, calculation of doses; and the preparation and use of percentage and stock solutions. Laboratory exercises are designed to emphasize practical applications of the basic principles discussed and also to acquaint the student with many of the fundamental pharmaceutical techniques. (5 cred.; soph.; prereq. Gen. Inorg. Chem. 7 or 10.) Mr. Netz and assistants.
- 3w-4s. Pharmaceutical Preparations. A study of the principles of the United States Pharmacopeial and National Formulary processes. This course includes didactic instruction and laboratory work in the manufacture of U.S.P. and N.F. preparations, e.g., aromatic waters, infusions, decoctions, syrups, solutions, lotions, magmas, mixtures, spirits, tinctures, fluid extracts, extracts, powders, mucilages, glycerites, etc. (10 cred.; soph.; prereq. Pharm. 1f, 2f.) Mr. Netz and assistants.
- 5f. Pharmaceutical Latin. A study of those Latin and latinized nouns, pronouns, adjectives, verbs, adverbs, conjunctions, and prepositions commonly encountered in pharmaceutical practice. (1 cred.; soph.; no prereq.) Mr. Netz.
- 56w-57s. Pharmaceutical Preparations. A continuation of Pharmacy 4s, given in the sophomore year. This course is composed of lectures and laboratory work in the manufacture of resins, oleoresins, elixirs, liniments, nebluae, collodions, soaps, plasters, ointments, cerates, effervescent salts, masses, pills, emulsions, dental preparations, etc. (8 cred.; jr.; prereq. Pharm. 4s.) Mr. Bachman and assistants.
- 58f-59w-60s. Dispensing Pharmacy. This course includes the critical study of the prescription and the practical work involved in the compounding and dispensing of a wide range of prescriptions taken from actual medical practice. Special attention is given to physical, chemical, and therapeutic incompatibilities. A large number of prescriptions are compounded, packaged, labeled, wrapped, and priced as in actual practice. During the winter and spring quarters the student is given practice in taking physicians' prescriptions over the telephone. (12 cred.; sr.; prereq. Pharm. Chem. 3s, Pharmacog. 57s, Pharm. 57s, Org. Chem. 2s.) Mr. Bachman, Mr. Almin, and assistants.

- 61f-62w-63s. Dispensary Prescription Practice. Practical experience in dispensing is received in the pharmacy of the University of Minnesota Hospitals where the students, under supervision, compound prescriptions written by the physicians in the University of Minnesota Hospitals, Outpatient Department, and Students' Health Service. These courses run concurrently with Pharmacy 58f-59w-60s, respectively. (1 cred.; sr.; prereq. same as for Pharm. 58f.) Miss Bruce and assistants.
- 64w. Pharmaceutical Jurisprudence. Fundamental principles of law and legal procedure, legal duties and public responsibilities of the retail pharmacist, analysis of the federal statutes and the Minnesota state laws and regulations affecting the practice of pharmacy, and a discussion of a select group of common legal problems of practical importance to the pharmacist. (3 cred.; sr.; no prereq.) Mr. Bachelder.
- 65w. Cosmetics. A study of the composition and methods of manufacture of cosmetic products. (2 cred.; sr.; prereq. Org. Chem. 2.) Mr. Netz and assistants.
- 66w-67s. Industrial Manufacturing Pharmacy. This course deals with typical problems incident to the production of pharmaceutical preparations on an industrial scale. Laboratory work includes manufacture of compressed tablets, granulating of salts and mixtures of salts preparatory to tablet making, coating and polishing of tablets and pills, milling of ointments and tooth pastes, filling of collapsible tubes, etc. Registration in this course is limited to available instructional facilities. Professional elective. (6 cred.; sr.; prereq. Pharm. 57s.) Mr. Almin and assistants.
- 68w-69s. Hospital Pharmacy. Practical pharmaceutical training for the modern hospital. It includes a study of hospital administration and procedure, also instruction in purchasing supplies (drugs, rubber goods, surgical supplies), stock control, records, manufacturing pharmaceutical preparations, prescriptions, and the preparation of parenteral solutions and allergens. Registration in this course is limited to available instructional facilities. Professional elective. (6 cred.; sr.; prereq. Pharm. 58f, 61f.) Miss Bruce and assistants.

At the conclusion of the spring quarter, students who have completed the course in Hospital Pharmacy are offered the opportunity to acquire an additional two weeks' full-time training in the Dispensary of the University Hospitals. No fee will be charged for this extra instruction, neither will there be any financial remuneration nor scholastic credit given for it.

- 70w-71s. First Aid. The contents of this course are the same as those contained in the Standard, Advanced, and Instructor's Courses offered to laymen by the American Red Cross, and consist of lectures, demonstrations, and practical work in first aid. All three sections of this course will be taught by persons authorized by the American Red Cross to give this instruction. An instructor's certificate in first aid will be awarded by the American Red Cross to those students who successfully complete the work. (2 cred.; sr.; no prereq.) Dr. Potthoff, Dr. Rose, and Mr. Hartman.

PHARMACEUTICAL CHEMISTRY

Professors Ole Gisvold, Ph.D., Charles H. Rogers, D.Sc.; Assistant Professors George E. Crossen, Ph.D., Charles O. Wilson, Ph.D.; Teaching Assistants Edward H. Carlson, B.S. in Phm., Hartmann Goetze, B.S. in Phm., LaVerne Small, B.S. in Phm.; Head Pharmacist Vincent Kenjoski, B.S. in Phm.

- 1f-2w-3s. Inorganic Pharmaceutical Chemistry. In this course, the histories, sources, methods of manufacture, common impurities, formation in pharmaceutical preparations, properties, characteristic reactions, and uses of the inorganic chemicals employed in the science and art of pharmacy are studied. The laboratory work includes the preparation, purification, and tests for the identity and purity of typical

- inorganic compounds of special pharmaceutical interest. (9 cred.; soph.; prereq. Qual. Chem. 12 or 11.) Mr. Crossen and assistants.
- 54w-55s-56f. Quantitative Pharmaceutical Chemistry. A general course treating of the fundamental principles, methods, and procedures of quantitative analysis as applied to the analyses of pharmaceutical chemicals, preparations, and drugs. Laboratory work includes gravimetric, volumetric, and gasometric analyses as well as alkaloidal assaying, the assay of volatile oils, etc. (11 cred.; jr., sr.; prereq. Pharm. Chem. 3s.) Mr. Wilson and assistants.
- 58f. Pharmaceutical Biochemistry. A study of the chemistry of metabolism, body fluids and secretions. (3 cred.; sr.; prereq. Org. Chem. 2, Pharm. Chem. 56f.) Mr. Fischer, Mr. Wilson, and assistants.
- 59w-60s. Pharmaceutical Technology. A study of the technological principles involved in the conversion of raw materials into finished pharmaceutical chemicals on an industrial scale. Registration in this course is limited to available instructional facilities. Professional elective. (6 cred.; sr.; prereq. Pharm. Chem. 3s.) Mr. Rogers and assistants.
- 161f-162w-163s. Organic Medicinal Products. This course treats of the sources, methods of production, classification, properties, reactions, and uses of the natural and synthetic organic compounds used as therapeutic agents. (9 cred.; sr., grad.; prereq. Org. Chem. 2.) Mr. Gisvold.
- 164w-165s. Food and Drug Analysis. A study of the processes of manufacture and of the composition of food and drug products. This course includes a detailed consideration of the legal requirements of the Food, Drug, and Cosmetic Act and of the official analytical methods of the United States Pharmacopeia, the National Formulary, and the Association of Official Agricultural Chemists. Registration in this course is limited to available instructional facilities. Those senior pharmacy students who have the prerequisites for Organic Chemistry 153s and expect to elect it as their spring quarter professional elective, must register for Pharmaceutical Chemistry 164w. (See page 19.) Professional elective. (6 cred.; sr., grad.; prereq. Pharm. Chem. 3s, 56f, Org. Chem. 2.) Mr. Crossen and assistants.

PHARMACOGNOSY

- Professor Earl B. Fischer, Ph.D.; Instructor Charles E. Smythe; Teaching Assistants Azor J. Kleven, B.S. in Phm., Arnold C. Neva, B.S. in Phm.; Gardener George Balok, and assistants.
- 1f. Pharmacognosy of the Thallophytes. A classification and study of drugs obtained from the thallophytes. Lecture and laboratory work include a consideration of life histories of the members of this group with particular reference to the development, function, and nature of the plant parts which furnish medicinal products. (2 cred.; soph.; no prereq.) Mr. Fischer, Mr. Neva, and assistants.
- 2w. Pharmacognosy of the Bryophytes, Pteridophytes, and Spermatophytes. This course deals with the drugs obtained from the bryophytes, pteridophytes, and spermatophytes, and is a continuation of Pharmacognosy 1f. The life histories and microscopic characteristics of the members of these groups and drug products obtained from them are studied. (2 cred.; soph.; prereq. Pharmacog. 1f.) Mr. Fischer, Mr. Neva, and assistants.
- 3s. Pharmacognosy and Pharmaco-Histology of the Angiosperms. This course in microscopy and micrometry includes a detailed study of the inner structure of vegetable drugs derived from the angiosperms. Special consideration is given cell contents by means of which vegetable drugs may be identified, and adulteration detected. (2 cred.; soph.; prereq. Pharmacog. 2w, Bot. 18w.) Mr. Fischer, Mr. Smythe, Mr. Neva, and assistants.

- 54f. Drug Collection and Medicinal Plant Study. The course consists of the study of a large number of plants grown in the University of Minnesota medicinal plant gardens. Attention is given to the methods of cultivating and preparing crude drugs, the macroscopic characteristics of the living plants from which they are obtained, the preparation of herbarium specimens, the cleaning and milling of drugs, etc. (5 cred.; jr.; prereq. Pharmacog. 3s, Bot. 19s.) Mr. Fischer, Mr. Smyithe, Mr. Neva, and assistants.
- 55f.‡ Pharmacognosy of Vegetable Drugs. This course treats of the identification, nature, and properties of official, and some of the more important nonofficial, drugs belonging to plant families from the Algae through the Chenopodiaceae. The order of presentation is based upon the taxonomic classification of plant families. (3 cred.; jr.; prereq. Bot. 19s, Pharmacog. 3s.) Mr. Fischer, Mr. Smyithe, and assistants.
- 56w.‡ Pharmacognosy of Vegetable Drugs. A course complementary to Pharmacognosy 55f. It includes the study of the drugs belonging to plant families from the Phytolaccaceae through the Malvaceae. (3 cred.; jr.; prereq. same as for Pharmacog. 55f.) Mr. Smyithe and assistants.
- 57s.‡ Pharmacognosy of Vegetable and Animal Drugs. This course further complements 55f and 56w and includes the study of drugs belonging to plant families from the Sterculiaceae through the Compositae. In addition, U.S.P. and N.F. drugs of animal origin are studied with respect to the identification, nature, and properties of each. (3 cred.; jr.; prereq. same as for Pharmacog. 55f.) Mr. Fischer, Mr. Smyithe, and assistants.
- 58w. Biological Products. A study of the preparation and pharmaceutical properties of the important official and nonofficial vaccines, toxins, anti-toxins, and serums. (2 cred.; sr.; prereq. Bact. 51.) Mr. Fischer.
- 59s. Field Work. The classes in pharmacognosy are taken on searches for native medicinal plants. Trips are arranged to include different localities such as swampland, upland, wooded tracts, etc. By so doing, the environmental and other characteristics of medicinal plants are brought to the attention of the students. (No cred.; soph., jr.; required of all students taking Pharmacog. 3s and 54f.) Mr. Fischer and Mr. Neva.
- 60w. Pharmacognosy and Pharmaco-Histology. This course is a continuation of Pharmacognosy 3s for those students wishing to elect further work in this field. It deals with the microscopy of additional cell contents by means of which the purity and identity of vegetable drugs are determined. Registration in this course is limited to available instructional facilities. Professional elective. (3 cred.; sr.; prereq. Pharmacog. 54f.) Mr. Fischer, Mr. Smyithe, Mr. Neva, and assistants.
- 61s. Pharmacognosy and Pharmaco-Histology. The general character of the lecture and laboratory work of this course is the same as that of Pharmacognosy 60w. It deals with the microscopic appearance, structure, and function of vegetable drug cells and tissues. Practical instruction is given in the use of important microscopical accessories such as the micropolariscope, microtome, microphotographic camera, staining reagents, etc. Registration in this course is limited to available instructional facilities. Professional elective. (3 cred.; sr.; prereq. Pharmacog. 60w.) Mr. Fischer, Mr. Smyithe, Mr. Neva, and assistants.
- 162w-163s.‡‡ Biological Assay of Drugs. This course includes didactic and laboratory considerations of the biological assays of the vegetable and animal drugs of the U.S.P. and N.F. Registration in this course is limited to available instructional facilities. Professional elective. (6 cred.; sr., grad.; prereq. Pharmacog. 57s, Pharm. Chem. 56f.) Mr. Fischer, Mr. Smyithe, and assistants.

‡ A fee of \$2 per quarter is charged for this course.

‡‡ A fee of \$5 per quarter is charged for this course.

COURSES INCLUDED IN THE PHARMACY CURRICULUM
AND OFFERED BY
OTHER DEPARTMENTS OF THE UNIVERSITY

BACTERIOLOGY AND IMMUNOLOGY

Professor Winford P. Larson, M.D., Head; and instructors.

52f,w,s,su. General Bacteriology. Lecture and laboratory course. The principles and technique of general bacteriology. Studies in the morphologic and biologic characters of the common bacteria. Preparation of culture media. Disinfectants and disinfection. Bacteriology of water and food products. (5 cred.; sr.; prereq. one yr. biol., one yr. chem.) Instructor arranged.

BOTANY

Professors C. Otto Rosendahl, Ph.D., Chairman, Frederic K. Butters, Ph.D.; and instructors.

17f-18w-19s. General Botany. Study of the external form and internal structure of the various organs of flowering plants; special study of the flower and the outline of the classification of flowering plants, etc. (3 cred. per qtr.; soph.; no prereq.) (Credits earned in Bot. 1, 5, and 7 are accepted in lieu of Bot. 17, 18, 19.) Mr. Butters and assistants.

CHEMISTRY: INORGANIC

Professor M. Cannon Sneed, Ph.D., Chief; Associate Professor Lillian Cohen, Ph.D.; and assistants.

6f-7w.‡ General Inorganic Chemistry. A study of the general laws of chemistry and of the nonmetals and their compounds. (5 cred. per qtr.; fr.; no prereq.) (Credits earned in Gen. Inorg. Chem. 9 and 10 or 14 and 15 are accepted in lieu of Gen. Inorg. Chem. 6-7.) Miss Cohen and assistants.

12s.‡ Qualitative Chemical Analysis. Laboratory work in systematic qualitative analysis with lectures on solution, ionization, chemical and physical equilibrium, oxidation and reduction, and other subjects pertinent to qualitative analysis. (5 cred.; fr.; prereq. Chem. 7.) (Credits earned in Qual. Chem. Anal. 11 are accepted in lieu of Qual. Chem. Anal. 12.) Miss Cohen and assistants.

CHEMISTRY: ORGANIC

Professors Lee I. Smith, Ph.D., Chief, Walter M. Lauer, Ph.D.; Associate Professor C. Frederick Koelsch, Ph.D.; Assistant Professor Richard T. Arnold, Ph.D.

1f,w-2w,s.‡ Elementary Organic Chemistry. Discussion of important classes of organic compounds, both aliphatic and aromatic. Laboratory work includes the preparation of typical substances. (4 cred. per qtr.; pharm., premed., predent.; prereq. Inorg. Chem. 12 or 11.) Mr. Koelsch, Mr. Arnold, and assistants.

153s.‡ Elementary Organic Chemistry. Discussion of the important classes of organic compounds, both aliphatic and aromatic, together with some heterocyclic compounds. Laboratory work includes the preparation of typical substances. Course 153 is a prerequisite to all other advanced courses in organic chemistry. (5 cred.; prereq. 2 qtrs. of organic chemistry.) Those senior pharmacy students who have shown

‡ A fee of \$2 per quarter is charged for this course.

exceptional ability in Org. Chem. 1 and 2, and who contemplate pursuing graduate work with a major in pharmaceutical chemistry and a minor in organic chemistry may elect this course as their professional elective of the spring quarter. They will be required to take Pharmaceutical Chemistry 164w (Food and Drug Analysis) as their professional elective for the winter quarter. (See page 17.) Mr. Smith, Mr. Lauer, and Mr. Arnold.

ECONOMICS AND BUSINESS ADMINISTRATION

ECONOMICS

Professors Russell A. Stevenson, Ph.D., LL.D., Dean, Ernest A. Heilman, Ph.D., Roland S. Vaile, M.A.; Associate Professors A. Hamilton Chute, Ph.D., Harry J. Ostlund, B.A.; and instructors.

Econ.10f. An Introduction to Economics. The organization of modern industry; the various forces that influence prices, such as consumer demand, cost, degree of competition or monopoly, the quantity and rate of circulation of money, etc. (3 cred.; open only to College of Pharmacy students; no prereq.) Instructor arranged.

Econ.30w. Elements of Retail Accounting. The principles of accounting applied to retail record keeping, adjustment, and closing of records. The construction and analysis of statements. (3 cred.; open only to College of Pharmacy students; prereq. Econ. 10.) Mr. Ostlund.

BUSINESS ADMINISTRATION

B.A.67s. Retail Store Management. The principles of retail store management, including the planning and control of store operation, the nature of consumer demand, and the analysis of retailing costs. (3 cred.; open only to College of Pharmacy students; prereq. Econ. 10 and 30.) Mr. Chute.

ENGLISH

Professor Joseph W. Beach, Ph.D., Chairman; and instructors.

4f-5w-6s. Freshman Composition. (3 cred. per qtr.; fr.; prereq. placement test.) Instructors arranged.

MILITARY SCIENCE AND TACTICS

Professor Harry L. King, Lieutenant Colonel, Coast Artillery Corps; Associate Professor Kent Nelson, M.D., Colonel, Medical Corps; Assistant Professors Charles E. Calverley, Ph.D., Captain, Coast Artillery Corps, Carl A. Jacobson, B.E.E., Captain, Signal Corps, William C. Rindsland, B.C.E., Captain, Coast Artillery Corps, Eugene L. Hess, B.Ch., Captain, Coast Artillery Corps, Philip M. Schroeder, M.S., First Lieutenant, Coast Artillery Corps, Robert S. Marvin, M.S., Second Lieutenant, Coast Artillery Corps; and instructors.

The University of Minnesota, like all other major schools in the nation, provides a four-year course in military science and tactics designed to qualify outstanding male students of the University for appointment in the Officers' Reserve Corps, Army of the United States. Courses of instruction in the following branches of the Army are offered: Coast Artillery (Anti-aircraft), Signal Corps, and Medical Corps. Physically qualified students in the College of Pharmacy may register for courses in the Coast Artillery Corps. These courses are elective and the total of eighteen credits apply toward a degree. The four-year program is split into two parts, basic and advanced. The Basic Course consists of six quarters of three hours of work per week, for one credit per quarter. Upon completion of the Basic Course a student whose academic average is

"C" or above is eligible to apply for the Advanced Course. A limited number of students are recommended to the president of the University by the professor of military science and tactics for the Advanced Course each year. Those students who are approved by the president of the University are admitted to the Advanced Course of instruction. This course consists of six quarters of five hours of classroom work per week, for which three credits per quarter are offered.

Students enrolled in the Advanced Course are furnished a regulation officers' uniform and receive from the federal government a fixed stipend per day while pursuing this course. At the end of the first year of advanced work, students attend a six-week summer camp. Coast Artillery Corps students usually go to Fort Sheridan, Illinois. All expenses incident to training camp attendance, i.e., travel expenses, etc., are borne by the government. Those students who successfully complete the Advanced Course, if recommended by the president of the University and by the professor of military science and tactics, are eligible for appointment as second lieutenants in the Army of the United States. A limited number of permanent (officers) commissions are available each year to outstanding Second Year Advanced Course students in both the United States Army and the Marine Corps. The total compensation for the two years of Advanced Course work amounts to over \$200. Officers trained in Minnesota's Armory are now on duty in all parts of the United States, its foreign possessions, and other parts of the world.

1f,2w,3s. First Year Basic Course R.O.T.C. Coast Artillery Corps. Leadership, rifle marksmanship, ammunition, weapons and materiel, hygiene and sanitation, military courtesy and discipline, national defense, military history and policy, army organization, obligations of citizenship, international situation. (3 cred.; fr.; no prereq.)

4f,5w,6s. Second Year Basic Course R.O.T.C. Coast Artillery Corps. Leadership, fire control, and position finding for seacoast and anti-aircraft artillery, identification of aircraft, characteristics of naval targets, rigging, motor transportation, basic gunnery, map reading. (3 cred.; soph.; prereq. 1f,2w,3s, higher algebra, and plane trigonometry.)

151f-152w,153s. First Year Advanced Course R.O.T.C. Coast Artillery Corps. Aerial photograph reading, leadership, pistol marksmanship, administration, gunnery for heavy artillery, gunnery for anti-aircraft artillery, defense against chemical warfare, signal communications. (9 cred.; jr.; prereq. 4f,5w,6s.)

154f-155w,156s. Second Year Advanced Course R.O.T.C. Coast Artillery Corps. Gunnery for automatic weapons, military law, military history, administration and supply, field engineering, leadership, combat orders, artillery tactics, orientation. (9 cred.; sr.; prereq. 151f-152w,153s.)

NAVAL SCIENCE AND TACTICS

Commander Joseph Baer, U. S. Navy, Retired, Professor of Naval Science and Tactics. Such other officers as may be detailed by the Bureau of Navigation, Navy Department, Washington, D.C.

The University of Minnesota is one of nine universities to offer United States naval training. The Naval Reserve Officers' Training Corps of the University of Minnesota provides for selected, physically qualified male students a four-year course which leads to a commission as ensign, United States Naval Reserve, or as second lieutenant, United States Marine Corps Reserve, provided the candidate applies for the commission, obtains a degree from the University, is recommended by the professor of naval science and tactics, and passes a prescribed physical examination.

The courses in Naval Science and Tactics are divided into two groups, Naval Science, and Navigation. Navigation is covered in three quarters at the convenience of the stu-

dent. Naval Science I and II with Navigation comprise the Basic Course in training. Naval Science III and IV (or IIIa and IVa) plus any incompleting navigation comprise the Advanced Course.

Naval R.O.T.C. practice cruises on board battleships, cruisers, and destroyers in the Atlantic or Pacific, are held annually during the summer. Attendance of one Advanced Course cruise is required, as a prerequisite to a commission, but all Naval R.O.T.C. students are eligible for a cruise each summer.

The Basic Course requires two hours of classroom work and one hour of drill per week for two years for which $1\frac{1}{2}$ credits per quarter are accepted toward graduation. The Advanced Course requires three hours of classroom work and one hour of drill per week for two years for which 3 credits per quarter are allowed. The Navigation Course requires three hours of classroom work per week for three quarters for which 3 credits per quarter are allowed. Credit is given for summer cruises at sea in the amount of $\frac{3}{4}$ credit for each two weeks of cruising. Cruise credits do not reduce the number of credits required for the degree in the student's major, but are in excess of degree requirements. Naval Science credits and Navigation credits, however, are accepted as fulfilling degree requirements.

Uniforms and equipment are furnished to students by the government without charge. All textbooks used are loaned to the student. All Naval R.O.T.C. students attending cruises are furnished transportation and subsistence. Students while enrolled in the Advanced Course are paid monthly commutation of subsistence by the Navy Department, and cruise pay on the Advanced Course cruise. The total pay received from the government amounts to about one hundred ninety dollars (\$190) for the two years in the Advanced Course.

All prospective candidates for the Naval R.O.T.C. must apply in person to the professor of naval science and tactics, University of Minnesota, before registering for the course, as enrolments are limited by law, and prescribed physical examination must be taken before the candidate can be considered.

NAVIGATION

Navigation courses given by the Department of Naval Science and Tactics are open to all university students.

Navigation I. Navigation and Nautical Astronomy. Fundamental principles of astronomy underlying navigation of ships and aircraft, charts, piloting, compasses, compensation of magnetic compass error, sextants, chronometers, dead reckoning. Three hours per week for one quarter. (3 cred.; prereq. plane trigonometry.)

Navigation II. Navigation and Nautical Astronomy. Piloting, time, solar ephemeris, determination of latitude and longitude by the sun, azimuth, astronomical triangles, lines of position, deep sea navigation. Three hours per week for one quarter. (3 cred.; prereq. Nav. I.)

Navigation III. Celestial Navigation. Sidereal time, determination of position by moon, stars, and planets, short methods, tides, chart work, star identification, theory and principle of gyroscopes, gyrocompasses. Three hours per week for one quarter. (3 cred.; prereq. Nav. II.)

MODERN FOREIGN LANGUAGE

FRENCH

Professor Francis B. Barton, Docteur de l'Université de Paris, Chairman of the Department of Romance Languages; and instructors.

1f-2w. Beginning French. (5 cred. per qtr.; all; no prereq.) Instructors arranged.

3f-4w. Intermediate French. (5 cred. per qtr.; all; prereq. 1-2, or two years high school French. Students who have had three years high school French will omit Course 3 and take Course 4.) Instructors arranged.

GERMAN

Professor Oscar C. Burkhard, Ph.D., Chairman; and instructors.

24f-25w-26s.† Chemical German. (4 cred. per qtr.; no prereq.) Instructors arranged.

27f-28w-29s. Chemical Prose. (3 cred. per qtr.; prereq. two years high school German or one year college German.) Instructors arranged.

For other modern foreign languages, see Combined Class Schedule.

PHARMACOLOGY

Professors Arthur D. Hirschfelder, B.S., M.D., Head, Raymond N. Bieter, M.D., Ph.D.; Associate Professor Harold N. G. Wright, Ph.D.

2f. Therapeutics and Toxicology. The most important drugs are studied from the standpoint of their pharmacodynamic, chemotherapeutic, and toxic effects, their applications in clinical therapeutics and the symptomatology and treatment of poisoning. 3 lectures and 3 laboratory hours per week. (4 cred.; sr.; prereq. Pharmacog. 54f and 57s; Physiol. 4s.) Dr. Hirschfelder.

PHYSICAL EDUCATION FOR MEN

Associate Professor Louis F. Keller, Ph.D., Acting Director of Athletics; and others.

The Department of Physical Education for Men offers courses in physical activities designed to improve physical fitness and to give to students a background of physical recreational skills. The courses are open to all students in pharmacy. Those who as a result of the entrance physical fitness examination are found to be below normal should consult the Department of Physical Education in Cooke Hall for advice as to an appropriate program.

For full information concerning courses, see the Combined Class Schedule.

PHYSICAL EDUCATION FOR WOMEN

Associate Professor Gertrude M. Baker, M.A., Acting Director; and instructors.

The Department of Physical Education for Women of the University of Minnesota offers courses available to students in pharmacy who have the time to take them. The courses are elective, not mandatory.

For full information concerning courses, see the Combined Class Schedule.

PHYSICS

Professor J. William Buchta, Ph.D., Chairman; and instructors

1af-2aw†-3as.‡ Introduction to Physical Science. Laboratory included. Lectures and experimental demonstrations of the principles underlying physical phenomena. (12 cred.; all; prereq. high school algebra and geometry.)

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$2 per quarter is charged for this course.

THE COLLEGE OF PHARMACY

Summer Courses (First Term)

1a-2a-3asu.†† Introduction to Physical Science, Part I. Laboratory included. (6 cred.; all; prereq. high school algebra and plane geometry.) Mr. Buchta.

Summer Courses (Second Term)

1a-2a-3asu.†† Introduction to Physical Science, Part II. Laboratory included. (6 cred.; all; prereq. 1a-2a-3asu Part I or equiv.)

PHYSIOLOGY

Professor Maurice B. Visscher, M.D., Ph.D., Head; Assistant Professor Joseph T. King, M.D., Ph.D.; and instructors.

4s. Physiology. Lecture, demonstrations, and quiz. (4 cred.; Pharm., S.L.A., H.Econ., and others; prereq. one qtr. zool., one qtr. chem.) Dr. King and others.

PREVENTIVE MEDICINE AND PUBLIC HEALTH

Professors Gaylord W. Anderson, B.A., M.D., Head, William A. O'Brien, M.D.; Assistant Professor Donald W. Cowan, M.D., M.S.; and assistants.

3f,w,s. Personal Health. Elementary principles of normal body functions; predisposing and actual causes of disease; ways in which disease may be avoided. (2 cred.; fr., soph.; no prereq., not open to students who have taken Human Biology (G.C. 10C) in General College.) Dr. O'Brien.

51s. Community Hygiene. Elementary concepts of development, spread, and prevention of preventable diseases; community programs for their control. (3 cred.; jr., sr.; prereq. 3, or Human Biology in the General College; not open to students who have taken 4, 50, 52, or 53.) Dr. Cowan.

ZOOLOGY

Professors Dwight E. Minnich, Ph.D., Chairman, Jerrey E. Wodsedalek, Ph.D.; Associate Professor Samuel Eddy, Ph.D.; Instructor Magnus Olson, Ph.D.; and assistants.

1f-2w-3s.†† General Zoology. (10 cred.; all; no prereq.) (Pharmacy students should register for lecture section 3 and laboratory section 6.) Dr. Eddy and assistants.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

‡ A fee of \$1 per quarter is charged for this course.

†† A fee of \$3 per summer term is charged for this course.

Bulletin of
UNIVERSITY OF MINNESOTA
Department of Agriculture
Short Courses

Twentieth Annual
Short Course for Veterinarians
and
Forty-third Semi-annual Meeting
**Minnesota State Veterinary
Medical Society**



June 25 and 26, 1942

**University Farm
St. Paul, Minnesota**

Vol. XLV

No. 36

May 29, 1942

Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minn. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 12, 1918.

6-42-900

PROGRAM

Thursday, June 25

Veterinary Building

a.m.

8:30 Registration—Lodging accommodations

DR. W. L. BOYD, presiding

9:30 Diseases of Suckling and Weanling Pigs—*H. C. H. Kernkamp*

10:30 Brucellosis in Swine—*C. E. Blye*

11:15 Therapy of Enteric Diseases of Swine—*M. H. Roepke*

DR. W. G. ANDBERG, presiding

p.m.

1:30 Hog Cholera—*J. D. Ray*

2:30 Nutrition and Its Relation to Disease—*E. F. Ferrin*

3:30 Swine Erysipelas—*J. D. Ray*

4:30 Swine Flu—*R. Fenstermacher*



Forty-third Semi-annual Meeting of the
Minnesota State Veterinary Medical Society

DR. F. W. HANSEN, presiding

8:00 Livestock Disease Control Problems with
Special Emphasis on Calftlood Vac-
cination.

The Minnesota State Livestock Sanitary Board will be present and join in a forum discussion of matters pertinent to the questions at hand.

Friday, June 26

Veterinary Building

DR. B. S. POMEROY, presiding

a.m.

- 9:00 Diseases of Lambs—*W. L. Boyd*
9:45 Seasonal Management of the Ewe
Flock—*P. A. Anderson*
10:30 Sheep and Their Diseases—*N. J. Miller*

p.m.

- 1:30- Diseases of Sheep and Swine—Clinics
4:00 and Demonstrations—*Doctors Miller,
Ray, and Boyd and staff*



The Ladies Auxiliary of the Minnesota State Veterinary Medical Society will hold its annual meetings and Frolics during the sessions of this Short Course. The time and places of meetings can be obtained at the Registration Desk.

ADMINISTRATION AND STAFF

- *Walter C. Coffey, President, University of Minnesota
 - *C. H. Bailey, Dean and Director, Department of Agriculture
 - *J. O. Christianson, Director of Agricultural Short Courses
 - *W. L. Boyd, Chief, Division of Veterinary Medicine
 - *P. A. Anderson, Assistant Professor, Division of Animal Husbandry
 - *C. E. Blye, Division of Veterinary Medicine
 - *R. Fenstermacher, Assistant Professor, Division of Veterinary Medicine
 - *E. F. Ferrin, Professor, Division of Animal Husbandry
 - F. W. Hansen, State Livestock Sanitary Board, St. Paul, President of the Minnesota State Veterinary Medical Society
 - *H. C. H. Kernkamp, Associate Professor, Division of Veterinary Medicine
 - N. J. Miller, Practitioner, Eaton, Colorado
 - J. D. Ray, Director of Laboratories, Corn States Serum Company, Omaha, Nebraska
 - *M. H. Roepke, Professor, Division of Veterinary Medicine
-
- * University of Minnesota.

DIVISION OF VETERINARY MEDICINE

Dr. W. L. Boyd, Chief	Dr. H. C. H. Kernkamp
Dr. W. G. Andberg	Dr. B. S. Pomeroy
Dr. R. Fenstermacher	Dr. M. H. Roepke
Mr. F. J. Weirether	Dr. C. E. Blye

NOTE

There will be an Agricultural Short Course fee of \$2.00 payable at time of registration.

The Bulletin of the UNIVERSITY of MINNESOTA

Special Announcement

The following bulletins will continue to be effective for 1942-43:

College of Education, 1940-42

General College, 1941-42

Library Instruction, 1941-42

Medical Technology, 1941-42

1942-43 editions of these bulletins will not be published.



Volume XLV, Number 37

June 1, 1942

Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 12, 1918

UNIVERSITY FEES

1942-43

TUITION FEES

School or College	Quarter Fee		Credit Hour Fee*	
	Resident	Nonresident	Resident	Nonresident
General College	\$25.00	\$50.00	¶	¶
Science, Literature, and the Arts	25.00	50.00	\$2.25	\$4.50
Agriculture, Forestry, and Home Economics	25.00	50.00	2.25	4.50
Public Health Nursing	25.00	50.00	2.25	4.50
Public Health	25.00	50.00	2.25	4.50
Education	25.00	50.00	2.25	4.50
Graduate School	‡32.00	‡50.00	‡2.75	‡4.50
Institute of Technology	32.00	50.00	2.75	4.50
Law School	42.00	69.00	3.75	6.00
Medical School and Clinical Graduate Work	77.00	129.00	\$3.50	\$6.00
Medical Technology	42.00	64.00	\$3.25	\$5.00
Physical Therapy	42.00	64.00	\$3.25	\$5.00
Nursing	27.00	50.00	\$1.25	\$2.25
Dentistry	62.00	84.00	\$2.75	\$3.75
Dental Hygiene	27.00	50.00	2.25	4.00
Pharmacy	37.00	54.00	‡1.75	‡2.50
Business Administration	32.00	50.00	2.75	4.50
Library Instruction	42.00	54.00	3.25	4.50
University College	Tuition of college in which work is taken			

* Students carrying less than the complete schedule of work may pay fees on a credit hour basis.

† Prorating in this college is on the basis of clock hours except for academic courses for which the fee is \$3.50 per credit hour for residents and \$5 per credit hour for nonresidents.

‡ All fellows, scholars, assistants, instructors, and members of the teaching staff and scientific bureaus and experiment stations giving 25 per cent or more of full-time service when regularly enrolled as students in the Graduate School shall not be required to pay tuition fees. This does not apply to commercial fellowships.

§ In these colleges the prorating is on the basis of clock hours.

¶ Part-time students shall be charged tuition prorated on the basis of full-time work, plus one third.

Special students in the General College shall be charged a quarter courses fee, residents \$10, nonresidents \$15. Special students include those not regularly matriculated, or those who have received a Bachelor's degree or its equivalent, or those registered for two courses or less in any quarter and not enrolled for other work in the University.

Incidental Fee

Institute of Technology	\$9.40 per quarter
Other colleges	9.00 per quarter

Required of all students registered for five or more credits in any one quarter.

Matriculation Deposit

Undergraduates	\$10.00
Graduate students	3.00

Special course fees additional.

For complete information concerning fees see General Information Bulletin for 1942-43.

The Bulletin of the
UNIVERSITY of MINNESOTA

General College of the University
Supplementary Announcement
for 1942-1943



Volume XLV, Number 38

June 11, 1942

*Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota.
Accepted for mailing at special rate of postage provided for in Section 1103, Act of
October 3, 1917, authorized July 12, 1918*

SUPPLEMENT

GENERAL COLLEGE BULLETIN

This supplement is designed to accompany the Bulletin of the General College of the University for 1941-42. The bulletin is not being reprinted for 1942-43 in order to conserve university funds. The previous year's bulletin is entirely adequate in its description of course offerings and information about the General College. The only significant changes are in descriptions of a few courses and in the revised requirements for the associate in arts degree. In addition to the changes indicated below, there may be certain changes within comprehensive areas announced at the registration period.

GENERAL EDUCATION IN WARTIME

Many students will feel that the times will force them to modify their normal college plans. It must not be forgotten, however, that there are certain basic needs and values which endure through and beyond any immediate crisis. As in the past, the General College will continue to offer a wide variety of courses from which the student may choose to suit his individual needs. These courses make it possible for the student to increase his understanding in many fields of knowledge basic to the realities of modern life without necessarily confining his work to courses prerequisite for advance study in specialized fields.

For those who wish to plan to meet the emergency specifically, the flexibility of the General College curriculum offers particular advantages. As described on page 15 of the bulletin in the paragraph titled "Courses in other colleges," a student may elect courses from other colleges of the University under the regulations stated. For example, students who wish to prepare for certain specialized services in the armed forces may supplement their general education courses with the appropriate work in such specialized courses as mathematics and physics. Other groupings may be arranged in preparation for business or semi-technical occupations. Advisers and counselors are available to help students choose the courses within the General College which best fit their needs and interests and to decide whether they can profit from courses taken in combination with other units of the University.

CHANGE IN REQUIREMENTS FOR THE DEGREE OF ASSOCIATE IN ARTS

Until the spring of 1942, the requirements for the two-year degree consisted in part of the passing of six comprehensive examinations. The faculty voted to change this particular requirement, since it was their opinion that it made student programs inflexible and left too little opportunity for the election of other specific courses in the General College which a student might desire or courses in other units of the University in combination as described above. Students who were registered in the General College in the spring quarter, 1942, and who maintain continuous residence thereafter until they have fulfilled degree requirements have the choice of meeting requirements for the degree under either the old or the new system. All others must comply with the new requirements to receive the associate in arts degree.

The new requirements are as follows:

1. The completion of 90 credits of work and the passing of 4 comprehensive examinations.
2. For both men and women, the completion of three quarters of physical education.
3. A final medical examination by the University Health Service a few weeks before commencement. Announcement of the time of this examination will be made in the Official Daily Bulletin.

COURSE CHANGES

- G.C. 16Bw. Course title changed to "Housing." This unit is designed with the twofold purpose of presenting some of the problems that exist in the housing of the individual and those that arise in the building of the community. The purpose is to discuss the elements of home buying, renting, or building and also to consider neighborhood and community values from the standpoint of city planning. 2 credits. Mr. Robert T. Jones.
- G.C. 56Af, Home Landscape Planning, and G.C. 56Bw, Home Landscape Planting and Materials are no longer offered as General College courses. Students in the General College may elect instead the courses offered in the Department of Horticulture, Hort. 24, Principles of Landscape Design, and Hort. 25, Principles of Planting. 3 credits each. Mr. Robert A. Phillips.

The Bulletin of the
UNIVERSITY of MINNESOTA

Learn for Living



EXTENSION CLASSES

1942-43

CALENDAR

1942			
September	14	Monday	Registration, first semester, begins
September	28	Monday	Classes begin
October	3	Saturday	Last day for registration without extra fee
December	19	Saturday	Christmas recess begins
1943			
January	4	Monday	Classes resumed
January	25	Monday	Registration, second semester, begins
February	1-5		Examinations, first semester
February	6	Saturday	First semester closes
February	8	Monday	Second semester classes begin
February	13	Saturday	Last day for registration without extra fee
May 29-June 4			Examinations, second semester
June	4	Friday	Second semester closes
June	6	Sunday	Baccalaureate service
June	12	Saturday	Commencement exercises

WHERE TO REGISTER

Minneapolis: (Campus)	402 Administration Building, University of Minnesota, Main 8177, Richard R. Price, Director
Minneapolis: (Downtown)	690 Northwestern Bank Building, Marquette Ave. and Sixth St. South, Main 0624, A. H. Speer, Resident Manager
St. Paul:	500 Robert St., Extension Center, Cedar 6175, C. H. Dow, Resident Manager
Duluth:	504 Alworth Building, Melrose 7900, John L. Macleod, Resident Manager

The Administration Building on the University campus may be reached by going one block north on Church Street from the Minneapolis-St. Paul car line, or two blocks south on 17th Avenue S.E., from the Oak-Harriet car line.

OFFICE HOURS

From September 21 to October 3, and from February 1 to 13, 8:30 a.m. to 8:30 p.m., including Saturdays.

At other times, 8:30 a.m. to 5:00 p.m.; Saturday to 12:00 noon.

From September 15 to March 5 the campus office will be open from 8:30 a.m. to 8:30 p.m., except on Saturday.

REGISTRATION TIME

All registrations should be made and fees paid before the first week of each semester. Registrations made later than Saturday, October 3, for the first semester, and Saturday, February 13, for the second semester, are subject to a late registration fee.

Volume XLV

Number 39

June 20, 1942

Entered at the post office in Minneapolis as second-class matter. Minneapolis, Minn. Accepted for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized July 12, 1918.

The cover picture is by Harriet Heenan, instructor in extension classes in photography.

EXTENSION CLASSES

UNIVERSITY OF MINNESOTA

1942-43

First Semester

September 28 to February 5

Second Semester

February 8 to June 4

CONTENTS

	Page
Calendar	Inside front cover
Information	3
Classes	
General	5
Business	31
Engineering	39
Day-by-day schedule of classes	44
Index of classes	46
Map of main campus	Inside back cover
How To Study Institute	Back cover

NOTE.—In keeping with the necessity for wartime economies, this bulletin has been greatly reduced in content. The bulletin has been printed in smaller type, class descriptions have been shortened, and much of the information about regulations covering extension class work has been omitted. This information is available in mimeographed form on request at any office of the General Extension Division.

Save this bulletin, as the supply this year is limited.

INTERESTING NEW CLASSES

	Page
American Ideals in American Literature.....	11
American Philosophy	20
Budgeting and Buying Today.....	16
Building Maintenance	34
Children in Wartime.....	9
Conservation of Clothing and Home Furnishings.....	16
Differential Equations for Engineers.....	42
Documents of Freedom	22
Economic Problems of Latin America.....	35
Elements of Electrical Engineering.....	40
Experimental Educational Psychology.....	9
Far East in Modern Times.....	16
Geography of the World War Theaters.....	13
Government Regulation of Business.....	35
Mental Hygiene	15
Nutrition for Public Health Nurses.....	15
Philosophy of Social Work.....	27
Plastic Molding	42
Portuguese	22
Psychology of Personnel Work in Industry.....	23
Psychology of War.....	23
Recreational Games for Fitness.....	25
Retailing Home Merchandise.....	37
Selling by Mail	37
The School and the Social Order.....	9
Wartime Propaganda and Censorship.....	17

INFORMATION

Am I Eligible To Take These Classes?

The University's extension classes are open to everyone who can handle them successfully. If you are in doubt, you are welcome to visit, without charge, the first meeting (but **only** the first meeting) of the class you are interested in and talk with the instructor.

How Much Do They Cost?

Most classes cost \$10 per semester. A few cost more or less than this amount, and some involve a small materials or laboratory fee. The fee for each class is designated in the description of the class further on in this bulletin. Checks should be drawn for the exact amount due, payable to the University of Minnesota.

When Do Classes Begin and How Long Do They Last?

Fall or first semester classes begin the week of September 28, 1942; spring or second semester classes, the week of February 8, 1943. Most classes start at 6:20 p.m. or 8:05 p.m., last an hour and forty minutes, and have seventeen weekly meetings. Variations are noted in class descriptions. Extension classes meet on **holidays** unless instructors and students agree otherwise.

Where Do Classes Meet?

At the University, or in downtown Minneapolis (690 Northwestern Bank Building) or downtown St. Paul (500 Robert Street); see class descriptions. The map inside the back cover shows location of buildings on the Main campus of the University.

Who Are the Instructors?

For the most part they are drawn from the university faculties; others are chosen from local professions and businesses because of special knowledge or experience. Instructors named in this bulletin will ordinarily teach as scheduled, but wartime conditions may interfere with these assignments.

How Do I Register for Extension Classes?

Registration periods, offices, and office hours are indicated inside the front cover of this bulletin; registration may also be made by mail. Please note that late registrations are subject to penalty: \$1 per class for those which are one week late, \$2 per class for those two weeks late. After the third week of a semester, registration for a credit class may be made only with the approval of the Students' Work Committee.

Transfers from one class to another may be made without charge by application to the main office of the General Extension Division.

Refunds of tuition fees are available on a pro-rata basis established by the Board of Regents to students who cancel their registrations, provided the student requesting the refund has not attended the class after its eighth week. Application for refund must be in writing, accompanied by fee receipt, and submitted before the end of the semester during which registration was made.

For your guidance, here is a sample class description with explanatory comment:

B.A.152-153† Cost Accounting. 3 credits each semester. \$10.

Principles used to determine the profitableness of each branch of manufacturing, and basis for judging the relative efficiencies of operation; materials, labor and burden; continuous process and production order costs; burden distribution methods, standard costs, etc. Prerequisite: Econ. 25L or equivalent.

First Semester

152 W 6:20 St. P. Ext. Center 216,
Tuttle

Second Semester

153 W 6:20 St. P. Ext. Center 216,
Tuttle

The **numbers and names** of extension classes are usually the same as those of corresponding day classes. Sometimes the letters **ex** follow the class number; this means that the extension class is a material modification of the corresponding day class for extension purposes. Capital letters preceding the class numbers refer to university divisions and departments; B.A. means Business Administration, G.C. means General College, ArtEd. means Art Education, M.E. means Mechanical Engineering, etc.

The **dagger** (†) means that both B.A. 152 and B.A. 153 must be taken before credit is given for either. When a class runs through two semesters, as does B.A. 152-153, the second semester is a continuation rather than a repetition of the first semester unless otherwise indicated.

The name of the class is followed by the **credits** which the class carries. Unless these credits are stated to be valid for a certificate, they are understood to be valid toward a university degree.

Then comes mention of the **tuition fee** (here, \$10) and of any **special fee** which may be involved. All fees are for one semester unless otherwise indicated.

Prerequisites refer to other classes which should precede the class in question. They may be disregarded only by getting the instructor's consent or by signing an auditor's form which waives claim to credit.

The **time and place** of meeting of classes are indicated by abbreviations which in most cases will be obvious. For example, "W 6:20 St. P. Ext. Center 216" means that the class will meet on Wednesday at 6:20 in the St. Paul Extension Center, room 216. The **instructor's name** follows the room number.

Where Can I Get Advice About a Program of Study?

The Students' Work Committee, Room 409 of the General Extension Division's campus office in the Administration Building, gives **advice** on the selection of individual classes and of programs of study leading to extension certificates, assists students to make contact with advisers in the various colleges of the University for information on programs of study leading to degrees, and arranges appointments for the testing and counseling services of the University Testing Bureau. The chairman of the Students' Work Committee keeps customary office hours and is also available till 9:00 p.m. during registration periods; at other times conferences may be arranged by appointment.

Classes listed in this bulletin may be cancelled because of insufficient enrolment; classes not listed in this bulletin will, when possible, be organized on petition from a sufficient number of persons.

Athletic Facilities and Season Tickets

Recreational activities for men and women are listed in this bulletin. In addition, men may use the gymnasium and swimming pool on terms available on request.

Any student enrolled for at least five credits of extension classes (but not correspondence study courses) may purchase one season ticket book if single, or two if married; fee, \$7—checks not accepted in payment. Books may be bought at downtown extension offices (see inside front cover) or at the Athletics office in Cooke Hall during the week before classes begin. Regulations governing purchase, transfer, and cancellation of these books are available on request.

Minneapolis Symphony Orchestra Tickets

Special rates for season tickets to the regular concert season are available to students registered for at least five credits in extension classes.

Evening Students Association

The association sponsors such extracurricular activities as dances, sports, bridge, music, dramatics, etc. Consult your class representative or the Students' Work Committee.

Correspondence Study Courses

A large selection of correspondence study courses is available to students who prefer this form of study; ask for a bulletin.

GENERAL CLASSES

For advice on programs of study leading to extension certificates and degrees, consult the Students' Work Committee, Room 409, Administration Building.

AGRICULTURE

6 Types and Breeds of Light Horses. 3 credits. \$10 plus \$2 laboratory fee.

The origin, history, and characteristics, the economic and recreational importance of the breeds of light horses. Practice judging of the more popular types and breeds. No prerequisite.

Second Semester

T 8:05 Livestock Pavilion, University
Farm, Harvey

7 Principles of Livestock Production. 3 credits. \$10 plus \$1 laboratory fee.

An introduction to the livestock industry including a study of the basic principles involved in selection, feeding, breeding, and management of beef cattle, dairy cattle, sheep, swine, horses, and poultry. Practice in judging the various kinds of farm animals. No prerequisite.

First Semester

T 8:05 Livestock Pavilion, University
Farm, Harvey

Rural Sociology. See pages 26, 27.

ANATOMY

5-6 General Human Anatomy. 4 credits each semester. \$13.50.

Lectures and demonstrations dealing with the gross anatomy, histology, embryology, and physical growth of the systems of the body. Anat. 5: cells, tissues, skeletal, muscular, and nervous systems. Anat. 6: circulatory, respiratory, digestive, urogenital, and endocrine systems, plus brief consideration of regional anatomy. No prerequisite but Zool. 1-2 recommended.

First Semester

5 MW 7:30 Campus Anatomy 301,
Members of department

Second Semester

6 MW 7:30 Campus Anatomy 301,
Members of department

The Human Body in Health and Disease. See page 14.

The Human Body in Operation. See page 14.

ANTHROPOLOGY

42 The Growth of Human Cultures. 3 credits. \$10.

Man's first appearance in the Old and New World; earliest stages in the development of civilization; discovery and invention, the formation of cultural patterns, and the spread and adaptation of culture to various environments in Asia, Africa, the South Seas, and among the American Indians; changes in the arts, beliefs, and institutions of primitive communities as observed in recent times. Prerequisite: 10 credits in science or social science.

First Semester

Th 8:05 Campus Wesbrook 104, Cline

ART

G.C. 22A Painting, Sculpture, and Architecture. 3 credits in General College. \$10.

A stimulating study in which the important art products of the past, as well as those of contemporary living, are discussed in relation to the ideas, forms, and techniques involved. Uses the facilities of General College Art Laboratory; lectures illustrated by art products, field trips, slides and movies. No prerequisite.

First Semester

22A Th 6:20 Campus Wesbrook 306, Fisher

ArtEd. 4-5-6 Drawing from Still Life and Pose. 3 credits. \$10 plus \$1 model fee, payable to instructor.

Emphasis on developing ability to do quick sketches. Especially planned to meet the needs of public school teachers. Includes ArtEd. 4-5-6, 7-8-9, 24-25-26; students may register for any three of these in any semester provided they are taken in sequence. No prerequisite.

Second Semester

T 6:20 Campus Jones 207, Lewis

ArtEd. 61-62-63 Drawing and Painting. 3 credits. \$10 plus \$1 model fee, payable to instructor.

Figure drawing, composition, and portrait in various media. Opportunity for interested students to work on special display and publicity projects for war use. Prerequisite: see instructor.

First Semester

Th 6:20 Campus Jones 207, Torbert

Ag.Eng. 42 Art Metal Work. 3 credits. \$10.

Designed for persons interested in hobbies and for teachers of handicrafts: soft soldering; wooden hammer making; working in copper, brass, pewter, and aluminum; making trays, plates, bowls, candlesticks, etc.; etching; use of jeweler's saw in pierced work; wax and lacquer finishes. Special attention to individual interests. Credit in Education and Agriculture. No prerequisite.

First Semester

W 6:20 Univ. Farm, Ag. Eng. 106,
20, Dent

Handicrafts I-II. 3 credits each semester. \$10.

Experience in simple handicrafts with recognition of patriotic opportunities and limitations of material, for those interested in camps, playgrounds, workshops, clubs, and adult education. Problems differ in the two semesters. Credit in College of Education in terms of corresponding handicraft courses upon recommendation of faculty adviser. Students may enter or continue in second semester. No prerequisite.

First Semester

Th 6:20 Campus Jones 10, Ross

Second Semester

Th 6:20 Campus Jones 10, Ross

Life Drawing and Painting I-II. 1½-3 credits each semester. \$10.

Figure composition; pencil, pen, charcoal, oil pastels, and water colors; print making. Amount of credit to be arranged with instructor. Students may register for either class either semester. No prerequisite.

First Semester

W 7:30 Campus Main Eng. 417, Burton

Second Semester

W 7:30 Campus Main Eng. 417, Burton

Freehand Drawing I-II. 1½ credits each semester. \$10.

Theory and practice of freehand drawing; perspective, design, and composition; drawing of geometric solids and ornaments in charcoal, pencil, pen and ink, water color, or other media. Students may register for either class either semester. No prerequisite.

First Semester

T 7:30 Campus Main Eng. 417, Doseff

Second Semester

T 7:30 Campus Main Eng. 417, Doseff

Commercial Drawing I-II. 3 credits each semester for certificate. \$10.

Elementary and advanced commercial art; design, lettering, layouts, posters in pen and ink, pencil, color, or other media. Solutions of practical problems stressed. Special attention to fashion drawing and design. Students may register for either class either semester. No prerequisite.

First Semester

M 7:30 Campus Main Eng. 417, Doseff

Second Semester

M 7:30 Campus Main Eng. 417, Doseff

Architectural Drafting. No credit. \$10.

A class for home builders; not for the professional architect. Conventional methods of architectural presentation as used in house planning; detailing, perspective, and rendering, to suit individual needs. Repeated second semester. No prerequisite.

First Semester

W 7:30 St. P. Mech. Arts High 103,
Smalley

Second Semester

W 7:30 St. P. Mech. Arts High 103,
Smalley

Engineering Drawing. See page 39.

ASTRONOMY

11 Descriptive Astronomy and Principles of Celestial Navigation. 3 credits. \$10.

The general principles and fundamental facts of astronomy; illustrated by lantern slides, simple problems, and naked eye and telescopic observations. Higher mathematics not necessary. Discussion of the basic facts underlying celestial navigation in accordance with specifications of the Army Air Corps. No prerequisite.

First Semester

W 6:20 Campus Physics 133, Luyten

13 Practical and Stellar Astronomy. 3 credits. \$10.

Supplements Astronomy 11, which, however, is not prerequisite; higher mathematics not necessary. A detailed description of the constellations and individual stars, the structure of the sidereal universe, determination of time from the stars; extended opportunity for the use of the telescope and the observation of the heavenly bodies.

Second Semester

W 6:20 Campus Physics 133, Luyten

BACTERIOLOGY**1 Elementary Bacteriology.** 4 credits. \$13.50 plus \$1 laboratory fee.

A general survey of the whole science for students who lack prerequisites for Bact. 53. Covers essentially same material as Bact. 53 but in less detail. Not good as prerequisite for advanced courses in bacteriology except by special permission. No prerequisite.

Second Semester

MW 7:30 Campus Millard 201, Skinner

53 General Bacteriology. 5 credits. \$17 plus \$2 laboratory fee.

Culture media; methods of staining and identification; principles of sterilization and disinfection; examination of air, water, milk; relation of bacteriology to the industries and to disease; bacteriology as a science; morphology and physiology. Prerequisite: 10 credits in chemistry and 10 credits in biology.

First Semester

TTh 7:30 Campus Millard 214, Skinner

114 Yeasts, Molds, and Actinomycetes. 4 credits. \$13.50 plus \$2 laboratory fee.

Isolation and identification of common and important yeasts, molds, and actinomycetes; special techniques; mycotic diseases. Prerequisite: 53 or equivalent.

Second Semester

TTh 7:30 Campus Millard 214, Skinner

116 Immunity. 3 credits. \$10 plus \$2 laboratory fee.

General and special laboratory technique; immunological phenomena; preparation of vaccines; production and collection of immune sera; demonstrations of various immune substances; technique of forensic blood tests, the Wassermann test, modified Wassermann, and the Kahn test; allergy, anaphylaxis, atopy; blood grouping. Class limited to 25 students. 11 weeks. Primarily for technicians; for prerequisite see instructor.

First Semester

MW 7:30 Campus Millard 214, Hoyt

BOTANY**1 General Botany.** 4 credits. \$13.50.

A survey lecture course on plants, contributing to liberal culture; characteristics of living matter; fundamental facts of structure, growth, and reproduction; relation of plants to their environment and to each other; principles underlying inheritance, variation, plant breeding, and organic evolution. No prerequisite.

First Semester

M 6:20-8:30 Campus Botany Aud., Huff

7 Taxonomy of Flowering Plants. 3 credits. \$10.

A general study of the classification and relationships of flowering plants. Prerequisite: see instructor.

Second Semester

W 6:20 Campus Botany 1, Moore

10ex Minnesota Plant Life. 3 credits. \$10.

A study of our native wild flowers, trees, shrubs, ferns, liverworts, mosses, lichens, and mushrooms. For teachers, camp and scout leaders, and all who would know more of our native plants and their habits. No prerequisite.

Second Semester

M 6:20 Campus Botany 4, Huff

Gardening. See page 12.

BUSINESS

See page 31.

CHEMISTRY

G.C. 37B Chemistry in Modern Life. 3 credits in General College. \$10.

The aim of this course is to explain through nontechnical lectures and demonstrations some of the interesting and significant applications of chemistry to modern living: chemistry and health—vitamins, hormones, sulfanilamide, anesthetics, and drugs; chemistry and industry—plastics, nylon, soilless growth of plants; chemistry and war—synthetic rubber, petroleum products, civilian gas and fire defense. No prerequisite but it will be of advantage to have had G.C. 37A, for which see page 21.

Second Semester

Th 6:20 Campus Physics 133, Hardy

N.B.—The following chemistry classes, except Advanced Quantitative Analysis, meet for a minimum of one lecture, one recitation, and three hours laboratory a week. Class periods: 7:30 to 10:00 p.m., both Tuesdays and Thursdays.

9ex‡ General Inorganic—Nonmetals. 5 credits. \$17.

The common nonmetallic elements and their principal compounds; the laws and theories of chemistry. No prerequisite.

First Semester

TTh 7:30 Campus Chem. 315, 210 Geiger

12ex‡ Qualitative Analysis. 5 credits. \$17.

The laws, theories, and calculations involved; systematic qualitative analysis. Prerequisite: Chem. 9ex or equivalent.

Second Semester

TTh 7:30 Campus Chem. 315, 210, Geiger

1ex‡ Quantitative Analysis—Gravimetric. 5 credits. \$17.

Principles and methods of gravimetric analysis; typical problems and proper laboratory practice. Prerequisite: Qualitative Analysis.

First Semester

TTh 7:30 Campus Chem. 310, 315, Geiger

2ex‡ Quantitative Analysis—Volumetric. 5 credits. \$17.

General principles, methods, and calculations of volumetric analysis. Prerequisite: Qualitative Analysis.

Second Semester

TTh 7:30 Campus Chem. 310, 315, Geiger

7ex‡ Quantitative Analysis—Premedical. 4 credits. \$13.50.

Introductory, covering principles and methods of gravimetric and volumetric quantitative analysis; typical problems and proper laboratory practice. Prerequisite: Qualitative Analysis.

Second Semester

TTh 7:30 Campus Chem. 310, 315, Geiger

123-124-125ex‡ Advanced Quantitative Analysis. 5 credits first semester, \$17; 4 credits second semester, \$13.50.

Prerequisite: Analytical Chem. 1-2 or equivalent.

First Semester123-124 TTh 7:30 Campus Chem. 310,
Geiger**Second Semester**124-125 TTh 7:30 Campus Chem. 310,
Geiger

CHILD WELFARE

40 Child Training. 3 credits. \$10.

Physical and mental development of the child; training of young children; behavior problems; techniques of good and bad management. Prerequisite: Psy. 1-2.

First Semester

T 4:40 Mpls. N. W. Bank Bldg. 690, Faegre

80 Child Psychology. 3 credits. \$10.

A survey of the psychology of the young child from the standpoint of development and learning. Prerequisite: Psy. 1-2.

First Semester

T 8:05 Campus Folwell 110, Maurer

‡ Class marked with a double dagger (‡) require a deposit of \$5, payable at Chemistry Department, of which \$2 is a laboratory fee and the remainder for breakage. The unused portion is to be returned.

85 Children in Wartime. 3 credits. \$10.

The effects of war and social stress upon children in the United States and other countries. Methods of meeting situations by individual and group care. Special problems of child care created by evacuation, defense industries, altered family environment, etc. Civilian defense activities for children. Post-war problems of reconstruction and rehabilitation. Repeated second semester. Prerequisite: 6 credits in psy. and 5 credits in soc.

First Semester**Second Semester**M 8:05 Mpls. N. W. Bank Bldg. 690,
Faegre

M 8:05 St. P. Ext. Center 217, Cummings

90 Home, School, and Family Relations. 3 credits. \$10.

Adjustment within and outside the family circle; the establishment of the home; discussion of family problems such as finance, discipline, recreation, etc. Repeated second semester. Prerequisite: Psy. 1-2.

First Semester**Second Semester**

M 8:05 St. P. Ext. Center 217, Cummings

T 4:40 Mpls. N. W. Bank Bldg. 690, Faegre

132 Development of the Elementary School Child. 3 credits. \$10.

Intellectual, emotional, and social growth of the child from age six to adolescence. Emphasis on school and home adjustment. Prerequisite: 12 credits in psy., ed. psy., or soc.

Second Semester

T 8:05 Campus Folwell 110, Maurer

EDUCATION

For advice on a program of study leading to a degree in the College of Education, consult the Students' Work Committee, Room 409, Administration Building.

Ed.C.I. 152 Supervision: The Adjustment of Schools to Individual Differences. 3 credits. \$10.

Adaptation of the school, the curriculum, and classroom procedures to the abilities and interests of pupils. Prerequisite: 15 hours in education.

Second Semester

Th 6:20 St. P. Ext. Center 216, Van Wagenen

Ed.C.I. 173 Organizing Units of Instruction in Elementary School. 3 credits. \$10.

A consideration of the principles and procedures involved in the organization of center of interest units utilizing social studies and natural science content in the development of language skills, number skills, study skills, and social behavior. Prerequisite: Ed.C.I. 119 or teaching experience.

First Semester

T 6:20 St. P. Ext. Center 217, Cook

Ed.Psy. 60 Introduction to Statistical Methods. 3 credits. \$10.

Statistical methods applied to educational investigation; measures of central tendency, variability, and correlation; primarily for classroom teachers and principals. Higher mathematics useful but not required. Prerequisite: 6 credits in psy.

First Semester

Th 6:20 St. P. Ext. Center 216, Van Wagenen

Ed.Psy. 138-139† Experimental Educational Psychology. 2 credits each semester. \$10.

A laboratory course for teachers in the use of experimental methods in the study of classroom problems, particularly in the field of the psychology of learning. Prerequisite: Ed. 51A or equivalent.

First Semester**Second Semester**138 M 6:20 Mpls. N. W. Bank Bldg. 690,
Van Wagenen139 M 6:20 Mpls. N. W. Bank Bldg. 690,
Van Wagenen**H.Ed. 180 The School and the Social Order. 3 credits. \$10.**

The impact of the war upon education will be the central theme of this course. Attention to the deep underlying issues and to such practical effects as changes in the curriculum, financial trends, academic freedom, and the rôle of education in post-war reconstruction. Will be conducted as a seminar. Prerequisite: 12 credits in soc. sci.

First SemesterW 6:20 Mpls. Public Lib. Auditorium
Brameld, Lindblom, Wesley**ENGINEERING**

See page 39.

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

ENGLISH

Classes in Composition

Preparatory Composition. No credit. \$7.50.

Intensive drill on grammatical forms, structure, and theme writing. Repeated second semester. No prerequisite. Note Composition 4-5-6 below.

First Semester

W 8:05 Campus Folwell 209, Dworsky
Th 6:20 St. P. Ext. Center 218, Lefevre

Second Semester

W 8:05 Campus Folwell 209, Dworsky

4-5-6 Freshman Composition. (One-year course.) 4½ credits each semester.

Class meets for a period of 2½ hours each week. \$15.

These classes satisfy the requirement in English for graduation and are prerequisite to other English classes. Admission based on satisfactory score in **English Placement Test**, or satisfactory completion of Preparatory Composition. Please note the following.

1. If you took the Placement Test in high school within the last four years, you must ask for assignment to the proper composition class a week before the first meeting of the class. (You need not take the test again.) Telephone, write, or call in person.

2. If you have not taken the test, report for it at the first date scheduled below:

First Semester

7:00 Thursday, September 24
7:00 Thursday, October 1
7:00 Thursday, September 24

Room 110, Folwell Hall, Campus
Room 110, Folwell Hall, Campus
St. Paul Extension Center 212

Second Semester

7:00 Thursday, February 4
7:00 Thursday, February 11
7:00 Thursday, February 4

Room 110, Folwell Hall, Campus
Room 110, Folwell Hall, Campus
St. Paul Extension Center 212

First Semester

4-5 M 6:20 Campus Folwell 102, Grandy
4-5 W 8:05 Campus Folwell 207, Lefevre
4-5 W 6:20 St. P. Ext. Center 217, Christie

Second Semester

4-5 W 6:20 Campus Folwell 207, Scallon
5-6 M 6:20 Campus Folwell 102, Grandy
5-6 W 6:20 St. P. Ext. Center 217, Christie

5-6 Freshman Composition. (For students who have had Composition 4 or 5.) 3 credits each semester. \$10.**First Semester**

5 T 6:20 Campus Folwell 207, Scallon
6 W 6:20 Campus Folwell 209, Dworsky

Second Semester

6 T 6:20 Campus Folwell 207, Dworsky

English Review. No credit. \$5.

A "refresher" course for those who need a quick and thoro review of grammar, mechanics, and usage. More intensive than Preparatory Composition. Eight meetings. No prerequisite.

First Semester

T 8:05 Campus Folwell 209, Dworsky

Classes in Writing

27-28† Advanced Writing I and II. 3 credits each semester. \$10.

Offers training in the fundamentals of creative writing, through lectures and the criticism of manuscripts. Advanced Writing I deals with expository writing: articles, essays, criticisms, etc. Advanced Writing II deals with description and narration. Students may begin with either I or II. Prerequisite: Comp. 4-5-6, or consent of instructor.

First Semester

27 W 6:20 Campus Folwell 203, Buckley

Second Semester

28 W 6:20 Campus Folwell 203, Buckley

69-70† Short Story Writing I and II. 3 credits each semester. \$10.

The technique of the short story with constructive work in story writing. Prerequisite: 27 and 28 or 29, or consent of instructor.

First Semester

69 M 6:20 Campus Folwell 205, Briggs

Second Semester

70 M 6:20 Campus Folwell 205, Briggs

81-82-83 Essay Writing. 3 credits each semester. \$10.

Practice in writing informal and critical essays, with special attention to the wartime values in the art of essay writing. Prerequisite: 27 and 28 or 29, or consent of instructor.

First Semester

81-82 T 6:20 Campus Folwell 203, Avery

Second Semester

82-83 T 6:20 Campus Folwell 203, Avery

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

91-92 Seminar in Writing (Advanced Short Story). 3 credits each semester. \$10.

For advanced students who write with facility and desire personal direction. Criticism of manuscripts submitted. Prerequisite: senior standing and 9 credits in Senior College English courses.

First Semester			Second Semester				
91	M	8:05	Campus Folwell 203, Phelan	92	M	8:05	Campus Folwell 203, Phelan

See also **Business English**, p. 34, **Radio Script Writing**, p. 23, **Journalism**, p. 17.

Classes in Literature**22-23† Introduction to Literature.** 5 credits each semester. \$17.

A study of English literature as to history and types of writing. 22, eighteenth century; 23, nineteenth century. Prerequisite to major in English and required for teacher's certificate. Prerequisite: Comp. 4-5-6 or exemption.

First Semester			Second Semester				
22	W	6:20	Campus Folwell 204, Avery	23	W	6:20	Campus Folwell 204, Avery

37-38-39 Contemporary Literature. 3 credits each semester. \$10.

Readings, lectures, and discussions of contemporary British and American literature including the novel. 37, prose; 38, poetry and drama; 39, novel. Designed to help students appreciate and understand the literature of today. Prerequisite: Comp. 4-5-6 or exemption.

First Semester			Second Semester				
38	T	6:20	Campus Folwell 226, McFadyen	37	T	6:20	Campus Folwell 226, McFadyen
39	Th	6:20	Campus Folwell 226, Warren				

40-41 The Bible as Literature. 3 credits each semester. \$10.

A study of the history, literary forms, and contents of the books of the Old Testament. First term: Selections from the historical narratives, with emphasis upon the political and cultural history of the Jews. Second term: Selections from the prophets, the wisdom literature, the psalms, and other poems and tales. No prerequisite.

First Semester			Second Semester				
40	M	6:20	Campus Folwell 204, Dunn	41	M	6:20	Campus Folwell 204, Dunn

45 American Life in American Literature. 3 credits. \$10.

An informal course for students who want to know their country better. Class discussion of life, customs, thinking, humor, etc., in various regions of the United States. Reading assigned as basis for class work. No prerequisite.

First Semester		
W	6:20	Campus Folwell 105, McDowell

American Ideals in American Literature. No credit. \$10.

Reading and discussion of the American ideals for which we fight as developed in American literature: The American Quest, Rewards of the American Way, Responsibilities of Americans, Individual Freedom, etc. An informal class open to everyone who wants to know his country and its ideals better. No prerequisite.

Second Semester		
W	6:20	Campus Folwell 105, McDowell

55-56† Shakespeare. 3 credits each semester. \$10.

Shakespeare's development as a dramatist; careful study of a selected list of plays. Prerequisite: Comp. 4-5-6 and 6 additional credits in English.

First Semester			Second Semester				
55	T	6:20	Campus Folwell 101, Nichols	56	T	6:20	Campus Folwell 101, Nichols

The Great Books. Not offered this year; see Documents of Freedom, page 22.

Book Reviews. No credit. \$6.

A series of lectures on current books for persons interested in interpreting the world today, its scenes, personalities, and changing values as reported by the most able and significant of contemporary authors. Second semester will include reviews of different books and of current New York plays. Ten meetings. No prerequisite.

First Semester			Second Semester		
M	6:20	Campus Folwell 113, Acker	M	6:20	Campus Folwell 113, Acker
T	6:20	St. P. Ext. Center 220, Acker			

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

How To Read Rapidly and Well. No credit. \$10.

Ability to read rapidly and well is more than an agreeable accomplishment; today it is a necessity in business, professional, and social life. Furthermore, it is a skill and like most other skills can be developed. Work in this class is designed to determine reasons why individual students are not reading efficiently, and to teach them techniques for improving their reading efficiency. Students may either enter or continue in second semester. No prerequisite.

First Semester

W 6:20 Campus Eddy 113, Triggs

Second Semester

W 6:20 Campus Eddy 113, Triggs

Documents of Freedom. See page 22.

FISHING**Fish and Fishing in Minnesota.** No credit. \$6.

A short course for sportsmen and others who want accurate—but nontechnical—knowledge of Minnesota fish; their habits and habitats, their feeding and propagation, their distribution and importance. Lectures, demonstrations, and discussion. Ten meetings, beginning March 3. No prerequisite.

Second Semester

W 7:30 Campus Zoology 313, Eddy

FRENCH**1-2 Beginning French.** 3 credits each semester. \$10.

Grammar, pronunciation, reading, and practice in speaking. No prerequisite.

First Semester

1 W 6:20 Campus Folwell 227, Wilson

Second Semester

2 W 6:20 Campus Folwell 227, Wilson

3-4 Intermediate French. 3 credits each semester. \$10.

Grammar review, composition, readings from modern authors. Prerequisite: French 1-2 or 2 years of preparatory French.

First Semester

3 M 6:20 Campus Folwell 213, Guinotte

Second Semester

4 M 6:20 Campus Folwell 213, Guinotte

5 French for Graduate Students. No credit. \$10.

Fundamentals of grammar; reading of appropriate prose. Prepares for examinations in French. Students may enter or continue in second semester. No prerequisite.

First Semester

W 6:20 Campus Folwell 201, Brackney

Second Semester

W 6:20 Campus Folwell 201, Brackney

20-21 Oral and Written French. 3 credits each semester. \$10.

Emphasis on conversation, with some review of grammar and composition. Prerequisite: French 4.

First Semester

20 M 6:20 Campus Folwell 304, Fermaud

Second Semester

21 M 6:20 Campus Folwell 304, Fermaud

65-66 Advanced French Conversation. 3 credits each semester. \$10.

To be conducted in French as a seminar on the contemporary French novel. Open to those who speak French fluently.

First Semester

65 W 6:20 Campus Folwell 304, Fermaud

Second Semester

66 W 6:20 Campus Folwell 304, Fermaud

GARDENING**Hort. 10 Indoor and Home Gardening.** 3 credits. \$10.

Special autumn gardening activities; garden construction and maintenance; growing bulbs in the garden and in the house; plant propagation and culture; special attention to indoor gardening and house plant culture. Lectures, demonstrations, and student projects. No prerequisite.

First Semester

W 7:30 Campus Botany 4, Phillips

G.C. 57A Home Gardening. 3 credits in General College. \$10.

Practical aspects of growing for the practical gardener. Attention to soils and their improvement; plants and their reproduction; preparation of flower beds; planting and transplanting; pruning; fertilizing; cultivating; control of insects and diseases; watering; weeding, etc. No prerequisite.

Second Semester

W 7:30 Campus Botany 4, Phillips

GEOGRAPHY**41 Geography of Commercial Production. 5 credits. \$17.**

A study of the geographic basis for the production of commodities entering into world trade. Counts toward major in geography but not toward a minor, in addition to Geog. 11. No prerequisite but Geog. 11 recommended.

First Semester

Th 6:20 St. P. Ext. Center 212, Dicken

110 Geography of South America. 3 credits. \$10.

A study of environmental conditions and their limiting effect on economic activities in the major geographic regions of South America. Counts toward either a major or minor in geography. Prerequisite: 8 credits in geography.

Second Semester

M 6:20 St. P. Ext. Center 212, Brown

120 Geography of Asia. 3 credits. \$10.

Areal differentiation in the major geographic regions of Asia. Special consideration of Japan, China, and India, and the geographic basis for existing conditions in those areas. Counts toward a minor in geography. Prerequisite: 10 credits in geog.

First Semester

T 6:20 Campus Burton 103, Davis

Geography of the World War Theaters. No credit. \$5.

A series of lectures designed to help the layman follow the progress of the war intelligently. The emphasis will be on those geographical areas most in the news at the time the lectures are given. One-hour meetings. No prerequisite.

First Semester

W 7:00 Campus Burton 103, Members of department

GEOLOGY**1-2 General Dynamic and Historical Geology. 3 credits each semester. \$10. (with laboratory, A and B, 5 credits, \$17).**

Geol. 1: the materials of the earth and the geologic processes; principles of earth sculpture, glaciation, volcanic activity, mountain building, etc.; geologic occurrence of gems, ores, oil, and other economic mineral resources. Geol. 2: the changing geology and life of the earth during the geologic past as interpreted from the rock records. No prerequisite.

N.B.—Students may register for lectures and laboratory (1 and A or 2 and B, 5 credits, \$17), for lectures only (1 or 2, 3 credits, \$10), for laboratory only (A or B, 2 credits, \$7), but the lecture courses are prerequisite to the laboratory courses.

First Semester

1 T 6:20 Campus Pillsbury 210, Thiel
A T 8:05 Campus Pillsbury 22, Thiel

Second Semester

2 T 6:20 Campus Pillsbury 210, Hanley
B T 8:05 Campus Pillsbury 22, Hanley

3 General Geology (Economic). 3 credits. \$10.

An introductory treatment of the origin, distribution, and occurrence of the principal commercial metals, nonmetals, coal, and petroleum. Prerequisite for degree: Geol. 1.

First Semester

T 6:20 Campus Pillsbury 110, Schwartz

23 Mineralogy. 3 credits. \$10.

A study of the physical and chemical characteristics of minerals; occurrence, genesis, and uses. Determinative work and identification of minerals by physical tests. No prerequisite.

First Semester

Th 6:20 Campus Pillsbury 110, Gruner

24 Mineralogy. 3 credits. \$10.

The crystal systems of the minerals. A continuation of the study of the minerals covering a larger variety of groups and species and application of more advanced methods. Prerequisite: Geol. 23.

Second Semester

Th 6:20 Campus Pillsbury 110, Gruner

25 Elements of Rock Study. 3 credits. \$10.

A study of rock-forming minerals and of igneous, sedimentary, and metamorphic rocks, their occurrence and classification. Prerequisite: Geol. 23.

First Semester

Th 6:20 Campus Pillsbury 110, Gruner

N.B.—The first semester class will be either 23 or 25, depending on the wishes of the students.

GENERAL CLASSES

GERMAN

1-2 Beginning German. 3 credits each semester. \$10.

First Semester

1 M 6:20 Campus Folwell 207, Downs

Second Semester

2 M 6:20 Campus Folwell 207, Downs

3 Beginning German. 3 credits. \$10.

Prerequisite: German 1-2.

First Semester

M 6:20 Campus Folwell 206, Wangsness

4 Intermediate German. 3 credits. \$10.

Modern narrative prose. Prerequisite: German 3.

Second Semester

M 6:20 Campus Folwell 206, Wangsness

17 German for Graduate Students. No credit. \$10.

Designed to help graduate students acquire a reading knowledge of German as required of candidates for higher degrees. Rapid reading of simple, graded material based on a vocabulary frequency count; intensive reading of approximately 100 pages of more difficult material pertinent to the student's field of specialization; study of functional, elementary grammar with stress solely on recognition of forms encountered in reading; frequent progress tests. No prerequisite.

First Semester

M 6:20 Campus Folwell 212, Klitzke and
Meessen

Second Semester

M 6:20 Campus Folwell 212, Klitzke and
Meessen

50-51 Composition and Conversation. 3 credits each semester. \$10.

Review of German grammar with particular attention to the idioms and characteristics of conversational and written German. Prerequisite: German 4.

First Semester

50 M 6:20 Campus Folwell 202,
Prottingeier

Second Semester

51 M 6:20 Campus Folwell 202,
Prottingeier

HEALTH

G.C. 10B The Human Body in Operation. 3 credits in General College. \$10.

Through a discussion of normal human physiology and of some common abnormalities, this class aims to bring the layman an understanding of the construction and operation of the human body. No prerequisite.

First Semester

Th 6:20 Campus Wesbrook 206, Potthoff

G.C. 10C The Human Body in Health and Disease. 3 credits in General College. \$10.

This course is intended for the person who desires understanding in matters of personal and family health on such topics as maternal welfare, hay fever and the other allergies, cancer, heart disease, tuberculosis, colds, immunizations, and selection of a family physician. It devotes attention also to community and national health problems, costs, and proposals for solution. No prerequisite but it will be of advantage to have had G.C. 10B.

Second Semester

Th 6:20 Campus Wesbrook 206, Potthoff

P.M.&P.H. 50 Public and Personal Health. 3 credits. \$10.

Causes of diseases and of physical defects; fundamental principles and working methods of health conservation and disease prevention. Lectures, discussions, and directed readings. Open without prerequisite to students who have not taken P.M.&P.H. 3, 4, 52, or G.C. 10C.

First Semester

T 6:20 Campus Med. Sci. 111, Boehrer

P.M.&P.H. 53 Elements of Preventive Medicine. 5 credits. \$17.

Nutrition, diet, susceptibility, resistance, and immunity to disease; methods of spread and prevention of communicable and degenerative diseases; protection of food, water, and milk; school health work; vital statistics. Prerequisite: 12 credits in biol. sci. or consent of instructor.

First Semester

T 6:20 Campus Millard 129, Cowan

P.M.&P.H. 54 Principles of Public Health Nursing for Nursing School Personnel. 4 credits. \$13.50.

Health teaching in the various services of a public health program with emphasis on the public health nurse's part in each phase of the program. Brief consideration of organization and administration of public health nursing programs. No prerequisite.

Second Semester

T 6:20 Campus Med. Sci. 111, Pangburn

P.M.&P.H. 56 First Aid and Safety for Nurses. 3 credits. \$10.

Principles of first aid in home, industry, and community; prevention of accidents; organization of community programs in first aid and safety; professional and legal responsibilities of nurses in administering first aid. Successful students will receive lay instructor's certificate authorizing them to teach first aid classes. Prerequisite: Nursing training.

First Semester

M 6:20 Campus Westbrook 201, Potthoff

P.M.&P.H. 59 Health of the School Child. 3 credits. \$10.

Mental and physical growth; discovery of physical defects; exercise, fatigue, emotional problems; health habits; diseases of school children; practical problems of health supervision and health instruction. Prerequisite: P.M.&P.H. 4, 50, 51, 52 or 53; will be waived for teachers and school nurses, but cred. granted only after completion of prerequisite.

Second Semester

M 6:20 Campus Med. Sci. 111, Ellis

P.M.&P.H. 61 Mental Hygiene. 3 credits. \$10.

Emotional reaction to the environment; prevention of mental disturbances; relationship of these problems to work of public health nurses. Prerequisite: P.M.&P.H. 53 and/or 62 which may be taken concurrently.

First Semester

Th 6:20 Campus Med. Sci. 111, Shalit

P.M.&P.H. 76 Nutrition for Public Health Nurses. 3 credits. \$10.

Principles of nutrition applied to family teaching, consideration of diet for normal living, at special periods in life, and for certain diseases. Discussion of diet problems of low income groups. Prerequisite: P.M.&P.H. 62 which may be taken concurrently.

Second Semester

Th 6:20 Campus Med. Sci. 111, Donelson

P.M.&P.H. 170 Supervision in Public Health Nursing. 3 credits. \$10.

Nature of supervision, classification of activities; methods of supervision, including field visitation, individual counseling, group conferences, staff education programs, administrative functions of supervisors, preparation and selection of supervisors. Prerequisite: P.M.&P.H. 53, 61, 63 and experience in public health nursing, or consent of instructor.

First Semester

W 6:20 Campus Med. Sci. 111, Freeman

N.B.—Students who register for P.M.&P.H. classes are invited to take advantage of the opportunity to confer sometime during the semester with Dr. Anderson or Miss Freeman about their professional objectives and study plans. Appointments for this conference can be made by calling Main 8177, Ext. 111.

Nursing Education. See page 19.

HISTORY**1-2† European Civilization.** 5 credits each semester. \$17.

Political, social, and economic factors. Course 1: 1500-1799; Course 2: 1799 to the present. No prerequisite.

First Semester

1 M 6:20 Campus Folwell 104, Mudgett

Second Semester

2 M 6:20 Campus Folwell 104, Mudgett

20-21-22† American History. 3 credits each semester. \$10.

History 20: 1763-1840; 21: 1840-1877; 22: 1877 to the present with special emphasis on social and economic factors. No prerequisite.

First Semester

20 M 6:20 St. P. Ext. Center 219, Kane

Second Semester

21 M 6:20 St. P. Ext. Center 219, Kane
22 W 6:20 Campus Folwell 102, Kane

20-21-22† American History. (One-year course) 4½ credits each semester. \$15.

For students who want to cover the entire sequence of History 20-21-22 in one year. Class meets for one period of 2½ hours each week. No prerequisite.

First Semester

20-21 T 6:20 Campus Folwell 102, Kane

Second Semester

21-22 T 6:20 Campus Folwell 102, Kane

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

56-57-58† Early Modern European History. 3 credits each semester. \$10.

57: the French Revolution, 58: the Napoleonic era, 56: not offered 1942-43. No prerequisite.

First Semester

57 W 8:05 Campus Folwell 102, Kane

Second Semester

58 W 8:05 Campus Folwell 102, Kane

65-66† Europe in the Twentieth Century. 3 credits each semester. \$10.

Course 65: 1900-1918; 66: 1918 to present. Background and causes of the first World War, history of Europe during four years of war, the Paris Conference and peace treaties, the new political and social order in central and eastern Europe, problems of the western democracies, the attempt at a new world order and its collapse, the background and outbreak of the second World War. No prerequisite.

First Semester

65 M 8:05 St. P. Ext. Center 219, Kane
W 6:20 Campus Burton 221, Deutsch

Second Semester

66 M 8:05 St. P. Ext. Center 219, Kane
W 6:20 Campus Burton 221, Deutsch

N.B.—Credit will be given for Hist. 65 or 66 individually when the other is not offered in any subsequent semester during which the student is enrolled in extension classes.

80-81-82† Introduction to Economic History. 4½ credits each semester. \$15.

Part I: A brief survey of pre-literate and pre-capitalistic societies with particular emphasis on the economic organization of early American peoples. Part II: Analysis of the evolution of our capitalistic organization of society. Part III: Comparison of democratic capitalism with communism, fascism, and national socialism. Throughout, attention is fixed upon the degree to which each type of economic organization has satisfied man's primary wants and needs. No prerequisite.

First Semester

80-81 W 6:20 Campus Folwell 104,
Mudgett

Second Semester

81-82 W 6:20 Campus Folwell 104,
Mudgett

93a-94a-95a Survey of Latin-American History. 3 credits each class. \$10.

History of Mexico, the Caribbean, Central America, and South America, from prehistoric times to the present. 93a: prehistoric and colonial periods to 1810; 94a: the 19th century, movements for independence; 95a: Latin America in the 20th century. No prerequisite.

First Semester

Th 6:20 Campus Burton 221, Jones

Second Semester

Th 6:20 Campus Burton 221, Jones

N.B.—This course will be offered as 93a-94a-95a (two semesters), 93a-94a (two semesters), or 95a (first semester only), as the students wish.

The Far East in Modern Times. No credit. \$10.

A survey of the history and foreign relations of China, Japan, and India in recent times, with emphasis on the policies and events which led to the attack on Pearl Harbor. Attention will be given to the great struggle of the Chinese people to attain national unity and democracy in the face of internal conflict and foreign aggression, to Japan's aim to dominate all Eastern Asia, and to the problems which complicate India's progress toward home rule. No prerequisite.

First Semester

Th 6:20 Campus Folwell 102, Kane

Documents of Freedom. See page 22.

HOME INTERESTS**G.C. 16A Conservation of Clothing and Home Furnishings.** 2 credits in General College. \$7.

A special wartime class dealing with the care and remodeling of clothing; proper use and care of electrical and other household equipment; application of good taste and judgment in combining and rearranging the things we have. 11 meetings. No prerequisite.

First Semester

M 6:20 Wesbrook 206, Jacobson

G.C. 17B Budgeting and Buying Today. 2 credits in General College. \$7.

Personal and family financial policy making, record keeping, and budgeting. Consumer problems: influence of advertising, meaning of labels, seals, guarantees, etc.; evaluation of sources of consumer information. Adaptations to such current regulatory procedures as bond purchases, payroll deductions, increased taxes, etc. 11 meetings. No prerequisite.

First Semester

Th 6:20 Campus Jones 109, Prosser

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

Child Welfare. See page 8.

Contemporary Marriage Problems. See page 27.

Gardening. See page 12.

INTERIOR DECORATING

ArtEd. 15 Interior Decorating I. 3 credits. \$10 plus 50 cents laboratory fee.

Special attention to identification of period and modern styles of furniture and to successfully combining several styles in one room. Additional subjects included: wall treatment, floor coverings, color schemes, window treatment, lighting. Interesting optional field trips. Drawing not emphasized. Repeated second semester. No prerequisite.

First Semester

M 6:20 Campus Jones 2, Lewis
T 8:05 Campus Jones 2, Lewis
W 6:20 St. P. Ext. Center 212, Lewis

Second Semester

M 6:20 Campus Jones 203, Lewis

ArtEd. 22 Interior Decorating II. 3 credits. \$10.

A continuation of ArtEd. 15. Color, history, and identification of decorative fabrics; study of china, glassware, and accessories. Discussion of materials used in building and styles of architecture. Students are required to do some elevation drawings in color. Auditing not advised. Juniors and seniors with skills or maturity in applying principles sufficient to carry this course at Senior College level may register for it as ArtEd. 72; consult instructor. Prerequisite: ArtEd. 15.

Second Semester

T 8:05 Campus Jones 203, Lewis
W 6:20 St. P. Ext. Center 212, Lewis

JOURNALISM

13 Introduction to Reporting. 3 credits. \$10.

News, its sources, methods of finding and gathering; correct style of written presentation; brief survey of the place and purpose of the newspaper and the processes of newspaper production. Prerequisite: Eng. Comp. 4-5-6 or exemption.

First Semester

W 8:05 Campus Murphy 311, Steward

69 Newspaper and Magazine Articles. 3 credits. \$10.

The special feature article; typical subjects and their preparation for magazines, trade papers, Sunday newspapers, syndicates, house organs, etc.; the qualities that make stories salable, use of pictures, and the market. Prerequisite: Jour. 13.

Second Semester

W 8:05 Campus Murphy 311, Ford

78 Publicity and Public Relations. 3 credits. \$10.

Practices of workers in the fields of publicity, material for publicity campaigns, practice in writing and production. Relation of publicity workers to the press. Public relations techniques and publicity for institutions, clubs, schools, libraries, churches, business organizations, for movements and campaigns. Students taking the course for credit will be encouraged to undertake projects related to organizations or activities with which they are associated. Prerequisite: Jour. 13.

Second Semester

W 6:20 Campus Murphy 311, Mickelson

92 Wartime Propaganda and Censorship. 3 credits. \$10.

Purpose, structure, and functioning of the wartime public relations and propaganda agencies of the National Government: Office of Facts and Figures, War Production Board, Co-ordinator of Information, Co-ordinator of Inter-American Affairs, Office of Civilian Defense, the public relations divisions of the armed forces, etc. The propaganda techniques of totalitarian countries and their integration with coercion, fifth column activity, sabotage, espionage. Restrictions on naval, military, and other information; wartime legal restrictions on freedom of expression. Not open for credit to students who have had 91 or 130-131. No prerequisite.

First Semester

W 6:20 Campus Murphy 311, Charnley, Mickelson

Other Writing classes. See page 10.

MUSIC

Individual instruction in music, as well as study in the regular classes offered by the Department of Music, is open to registration through the General Extension Division by students not able to attend day classes full time. This includes instruction in piano, organ, voice, violin, cello, and all orchestral instruments, as well as classes in history and theory of music. Students will register as for extension classes but attend the regular day sessions. The courses offered, the time and place of meeting, and the fees for individual instruction will be found in the program of classes for the College of Science, Literature, and the Arts, in the Combined Class Schedule. For further information consult any office of the General Extension Division.

4-5-6 Harmony (First Year). 3 credits each semester. \$10.

Study of chords, their construction, relation, and progressions. 6 not offered 1942-43. No prerequisite.

First Semester

4 T 6:20 Campus Music 103, Malcolm

Second Semester

5 T 6:20 Campus Music 103, Malcolm

34-35-36† History of Music. 3 credits each semester. \$10.

A course in historical appreciation, designed to give an understanding of music as literature; a nontechnical account of the principal music forms, the historic origins and associations; the nature and scope of musical expression. The class covers the history of music from Ancient Greece to the present day; it begins with Bach, continues to the twentieth century, and then reverts to the earliest period. Extensive musical illustrations. No prerequisite.

First Semester35-36 Th 6:20 Campus Music 103,
Ferguson**Second Semester**36-34 Th 6:20 Campus Music 103,
Ferguson**40-41-42 University Symphony Orchestra.** 3 credits for the year, \$5 per semester; or 3 credits each semester, \$10 per semester.

Section 1 consists of the Symphony Orchestra, open to those qualified, both day and extension students; Section 2 will furnish opportunity for acquiring the skill and orchestral routine necessary for membership in the Symphony Orchestra. Tryouts to determine section membership. Open to players of orchestral instruments.

First Semester

Sec. 1 W 8:05 Campus Northrop Aud.,
Members of department
Sec. 2 T 7:30 Campus Music Aud.,
Members of department

Second Semester

Sec. 1 W 8:05 Campus Northrop Aud.,
Members of department
Sec. 2 T 7:30 Campus Music Aud.,
Members of department

N.B.—Students may enter either semester, and may elect one or two meetings per week, with corresponding credit and fee.

43-44-45 University Chorus. 3 credits for the year. \$5 per semester.

The University Chorus is available to extension students through the General Extension Division. Students may enter either semester upon consent of director.

First Semester

T 7:00 Campus Burton Aud., Killeen

Second Semester

T 7:00 Campus Burton Aud., Killeen

56-57-58† Bach, Beethoven, Wagner, and Brahms. 3 credits. \$10.

Critical study of selections from the master works of the four greatest composers; biographical readings, topics and analyses, giving historical and literary background to culminative periods in composition. Open to those who have been in extension classes in music appreciation. 56 and 57 not offered 1942-43. Prerequisite: 34-35-36.

First Semester

58 W 6:20 Campus Music 104, Ferguson

G.C. 24A-24B Music Today. 3 credits each semester in General College. \$10.

Music Today is a class for those who wish to develop or increase their enjoyment and understanding of music as a means toward life enrichment. The material is presented by the lecture-laboratory method; that is, the lecture is carefully and completely illustrated with recordings. Students may enter either semester. No prerequisite.

First Semester24A W 7:00 Campus Westbrook 202,
Hill and assistants**Second Semester**24B W 7:00 Campus Westbrook 202,
Hill and assistants**Minneapolis Symphony Orchestra, Season of 1942-43: Pre-Concert Talks.** \$5.

A series of talks given on Thursday nights preceding the weekly Friday concerts of the Minneapolis Symphony Orchestra. Illustrated, interpretative comments on the programmed works—the aim being to help concert-goers listen more discriminately and more enjoyably. Series begins October 22 and terminates April 8, approximately 17 one-hour

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

sessions, certain Thursdays being omitted because of conflicts with the orchestra's concerts and winter tour. No prerequisite.

First Semester

Th 8:05 Campus Wesbrook 202,
Ferguson and Hill

Second Semester

Th 8:05 Campus Wesbrook 202,
Ferguson and Hill

Piano Playing for Pleasure. Credit to be arranged with instructor. \$10 plus \$1 laboratory fee.

It is easy to play the piano. Within a semester's time enough of the art may be acquired to enable one to enjoy playing for one's own pleasure. The fundamentals will be taught to individuals in small groups. Open to all, without previous musical training. Students may either begin or continue in the second semester.

First Semester

F 6:20 Campus Music 104, Twichell

Second Semester

F 6:20 Campus Music 104, Twichell

NATURAL HISTORY

Wild Life Conservation in Minnesota. No credit. \$10.

A survey of upland game birds, water fowl, and big game of Minnesota with emphasis upon their conservation, characteristics, habits, requirements, food habits, and status as game.

First Semester

W 6:20 U. Farm Adm. 100, Swanson

Birds of Minnesota. No credit. \$10.

A laboratory and field class in identifying and enjoying the birds of this region. Early meetings will make use of collections of the Museum of Natural History, but as soon as weather permits the class will meet in field locations. Study will be based on the manual of Dr. T. S. Roberts, who will be responsible for the class. No prerequisite.

Second Semester

T 6:20 Campus Museum of Natl. Hist. 309,
Roberts, Breckenridge, Kilgore

NURSING EDUCATION

60 Ward Administration. 3 credits. \$10.

Principles of administration, their application to ward management; opportunities for clinical teaching through efficient ward administration. Open to graduate nurses.

First Semester

M 8:05 St. P. Ext. Center 214, Hodgkins
W 7:30 Campus Med. Sci. 113, Harrington

61 Background for Personnel Work in Schools of Nursing. 3 credits. \$10.

Scientific method as applied to a study of behavior. The relationship of individual differences, heredity and environment, emotions, motivation, and intelligence to nursing school personnel work. Development of personality and social skills. Prerequisite: R. N.

First Semester

Th 6:20 Campus Eddy 106, Triggs

62 Application of Personnel Techniques in Schools of Nursing. 3 credits. \$10.

Aptitudes and their measurement, recording of test results and personnel records, orientation, over- and under-achievement, study habits and reading disabilities, mental hygiene techniques useful in personnel work. Prerequisite: 61, or recent study in general or educational psychology.

Second Semester

Th 6:20 Campus Eddy 106, Triggs

70ex Principles of Teaching and Supervision in Schools of Nursing. 3 credits. \$10.

Conditions favoring best preparation of the student nurse; sources, selection, and organization of subject matter; evaluation of nursing; principles and practices, and teaching methods; content and methods of clinical teaching. Repeated second semester. Open to graduate nurses.

First Semester

T 8:05 St. P. Ext. Center 212, Petry

Second Semester

T 8:05 Campus Med. Sci. 113, Petry

Ethics for Nurses. See Ethics, p. 20, in which special readings, assignments, and projects can be set up for nurses. See also page 15.

PHILATELY

Stamp Collecting. No credit. \$10.

A basic course for beginners including the historical, social, and commercial aspects of the hobby, the language of philately, the manufacture of stamps, the scope of collecting stamps, how and what to collect, and the essentials of bringing a collection to its final stage. No prerequisite.

First Semester

W 8:05 Campus Folwell 203, Arnal

PHILOSOPHY

1 Problems of Philosophy. 3 credits. \$10.

Introduction to the problems of philosophy; main fields of investigation; permanent problems; principal methods and schools of philosophy; historical and contemporary views. No prerequisite.

First Semester

W 8:05 Campus Folwell 322, Conger

W 6:20 St. P. Ext. Center 214, Everett

2 Logic. 3 credits. \$10.

There is a difference between "straight" and "crooked" thinking. Logic is the study of these differences. What pitfalls beset the attempt to think straight? When is a term properly defined? Why are sound definitions important? What do you understand by proof? When is proof of a statement called for? When is it complete? What is a hypothesis? How many of these do you use in an average conversation? What is meant by "scientific thinking"? Do you do any of it? Through systematic analysis of these and other related questions, the study of logic will show you what is involved in straight thinking. No prerequisite.

First Semester

Th 6:20 Campus Folwell 322, Castell

3 Ethics. 3 credits. \$10.

Problems of life in terms of (1) contemporary social, political, and economic forces, and (2) the character of the individual; the psychological and philosophical foundations of morality; the reconstruction of morality; the history of morals and ethical thought. No prerequisite.

Second Semester

W 6:20 Campus Folwell 322, Everett

10 Science and Religion. 3 credits. \$10.

An introductory survey of problems of the relations of religion and science, followed by an investigation of religious experience and scientific thinking. No prerequisite.

Second Semester

T 8:05 Campus Folwell 303, Norborg

63 Principles of Mature Thinking. 3 credits. \$10.

From infantile to adult intelligence. A study of language, meaning, understanding, reasoning, and the ways of knowing. Critique of infantilisms in thought and conduct. Applications to problems of philosophy and education. No prerequisite.

Second Semester

Th 6:20 Campus Folwell 322, Feigl

114 American Philosophy from Puritanism to Pragmatism. 3 credits. \$10.

A study of Puritanism, the Revolutionary period, transcendentalism, evolution, idealism, and pragmatism. Especially useful for students of American history and literature. Prerequisite: see instructor.

Second Semester

Th 6:20 Campus Folwell 303, Castell

170 Philosophy of History. 3 credits. \$10.

Lectures and class discussions on the philosophical background of the world conflict: nazism, communism, the Shinto religion, the deterministic conception of history, democracy in its national and international aspects. Prerequisite: see instructor.

First Semester

W 8:05 Campus Folwell 303, Norborg

Documents of Freedom. See page 22.

PHOTOGRAPHY

Cameracraft. No credit. \$10 plus \$5 laboratory fee.

Two informal classes—one for beginners and one for advanced amateur photographers. Both classes will enjoy the stimulating experience of working with other amateurs under the guidance of an experienced instructor. Both classes will use the extensive and modern

photographic laboratory of the School of Journalism. Both classes offered both semesters; students may enter either semester. No prerequisite, but consult instructor about choice of beginning or advanced class.

First Semester

Adv. M 6:20 Campus Murphy 20, Heenan
 Beg. W 6:20 Campus Murphy 20, Heenan

Second Semester

Adv. M 6:20 Campus Murphy 20, Heenan
 Beg. W 6:20 Campus Murphy 20, Heenan

PHYSICS**7-8-9 General Physics.** 5 credits each semester. \$17.

A general class for students majoring in physics, mathematics, chemistry, and in the Institute of Technology; includes mechanics, sound, heat, light, and electricity. Laboratory work an integral part of the class. Phys. 7 (Mechanics and Heat) first semester; Phys. 8 (Electricity and Modern Physics) second semester; Phys. 9 (Acoustics and Optics) second semester of 1943-44. Prerequisite: completion of, or concurrent registration in, differential calculus but note that students who cannot meet this requirement may register for Phys. 1a-2a, 4 credits (Science, Literature, and the Arts) each semester, \$13.50.

First Semester

7 MW 6:20 Campus Physics 166

Second Semester

8 MW 6:20 Campus Physics 166

G.C. 37A Physics in Modern Life. 3 credits in General College. \$10.

What do you know about the many scientific facts with which you are continually associated? Why the sky is blue and sunset red, why some of us wear glasses, what causes dew, fog, clouds, and rain, what sound is and what promotes good acoustics, what X rays are, what science knows about atoms, molecules, and electrons that is important to us in our daily lives. Today, the war gives critical importance to some of these problems. Lectures and demonstrations. No prerequisite.

First Semester

Th 6:20 Campus Physics 133, Vaughan

POLITICAL SCIENCE**1-2† American Government and Politics.** 3 credits each semester. \$10.

Designed to acquaint the citizen with the fundamental principles and practices of the American system. First semester: history of the Constitution, changes, units of government and their interrelationships, rights of citizens, the electoral process. Second semester: legislative proceedings, lobbies, civil rights, the role of courts, judicial review, etc. No prerequisite.

First Semester

1 M 6:20 Campus Burton 209,
 Kirkpatrick

Second Semester

2 M 6:20 Campus Burton 209, Christensen

25 World Politics. 3 credits. \$10.

Significance of contemporary events abroad and effect on American interests. Problems of the last peace conference and the next. Schedule of lectures will be altered to explain current developments and trace causes. No prerequisite.

First Semester

W 6:20 Campus Burton 209, Mills

40 Contemporary Political Philosophies. 3 credits. \$10.

We are living on the thin edge of history and it is essential that we know something of the ideological background of the great political movements of the modern world—democracy, communism, nazism, socialism, fascism. This class, therefore, has as its objective the examination, comparison, and evaluation of the main ideas behind these various movements in order that the student may have a greater appreciation of the values inherent in the democratic system. No prerequisite.

First Semester

T 6:20 Campus Burton 209, Kirkpatrick

85 Problems of World Politics. 3 credits. \$10.

The causes of the conflict between Japan, the United States, and the other western powers in the Far East and the western Pacific from the Philippines to French Indo-China and the Dutch East Indies; the rôle of tin, rubber, and oil; the Singapore naval base; the strength and weakness of Japan's position; how Japan's ambitions are linked with Russia's policy and the war in Europe. The problems of the Mediterranean from Gibraltar and North Africa to the Balkans and the Dardanelles; the aims of Germany, Italy, and Russia; the policies of Great Britain, France, and Turkey; the significance of Palestine, Iraq, and the Suez Canal. The contest between sea power and air power. No prerequisite.

Second Semester

W 6:20 Campus Burton 209, Mills

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

Documents of Freedom. No credit. \$10.

The history of freedom extends from ancient Greece to the present war. Its story runs through politics, economics, religion, science, art, and philosophy. It has been, and is, both the problem and the achievement of western civilization. This story has been enshrined in memorable documents, from Pericles' Address to the Athenians, through Magna Carta, the Declarations of the American and French Revolutions, the Chartist Petitions, and the Atlantic Charter in our own day. Students in this class will examine these documents, the historic crises out of which they came, and some of the great literary expressions which have accompanied them. The purpose is that we may see in the history of man the history of his struggle for freedom.

First Semester

T 6:20 Campus Folwell 104, Castell,
Mudgett

Second Semester

T 6:20 Campus Folwell 104, Castell,
Mudgett

Recent Social Trends. See page 27.**The Far East in Modern Times.** See page 16.**PORTUGUESE****1-2 Beginning Portuguese.** 3 credits each semester. \$10.

Grammar, pronunciation, reading, and practice in speaking. No prerequisite.

First Semester

1 Th 6:20 Campus Folwell 201, Spiegel

Second Semester

2 Th 6:20 Campus Folwell 201, Spiegel

PSYCHOLOGY**1-2 General Psychology.** 3 credits each semester but see note below. \$10.

The first semester class will consist of psychology for the layman. There will be a brief presentation of general principles of psychology, followed by extensive application of those principles to typical interests and life problems of adults. The second semester will consist entirely of technical groundwork for those who expect to do advanced work in psychology. No prerequisite.

First Semester

1 M 6:20 Campus Folwell 301, White
T 6:20 St. P. Ext. Center 212, White
W 8:05 Campus Folwell 301, White
F 6:20 Campus Folwell 110, White

Second Semester

1 W 6:20 Campus Folwell 110, White
2 M 6:20 Campus Folwell 301, White
T 6:20 St. P. Ext. Center 212, White

Note.—Students who satisfactorily complete *Psy. 1* will receive 3 credits toward an extension certificate. Only those who earn a grade of C or better in *Psy. 1* may go on to *Psy. 2*, and will receive, upon satisfactory completion of *Psy. 2*, 6 credits toward a degree for *Psy. 1-2* combined.

4-5 Introductory Laboratory Psychology. 2 credits each semester. \$10.

Student experiments illustrating the subject matter and methods of the psychology of today. Each student interprets his own performances with respect to general ability, special abilities (mechanical, clerical, artistic, etc.), interests, and personality traits. Supplies the laboratory experience necessary for using psychology as the natural science requirement in the Junior College. May be taken with or after *Psy. 1-2*.

First Semester

4 Th 6:20 Campus Psychology 211,
Crook

Second Semester

5 Th 6:20 Campus Psychology 211, Crook

56 Psychology of Advertising. See page 33.**119 Personality: Facts and Theories.** 3 credits. \$10.

Designed to dissolve the halo of mystery surrounding the concept of personality, to the end that persons may better understand themselves and those they influence. Special study of the many conditions, cultural and biological, which produce the varied traits distinguishing one person from another. Emphasis upon the importance of early experiences in forming character. Prerequisite: *Psy. 1-2*.

First Semester

W 8:05 Campus Psychology 115, Harris

144-145† Abnormal Psychology. 3 credits each semester. \$10.

Normal and abnormal behavior contrasted; varieties of maladjustment as illustrated in criminality, deficiency, fanaticism, and insanity; the inadequacies of personality as shown in everyday life. Prerequisite: see instructor.

First Semester

144 M 8:05 Campus Psychology 115, Bird

Second Semester

145 M 8:05 Campus Psychology 115, Bird

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

160-161 Psychology of Personnel Work in Industry. 3 credits each semester. \$10 plus \$1 laboratory fee.

Deals with selecting, training, and maintaining an efficient labor force in industry. Theory and practice of giving, interpreting, and evaluating psychological tests; constructing and using rating scales; training, maintaining, and promoting employees. There will also be actual practice in the use of psychological tests. No prerequisite altho Psychology 1-2 is recommended.

First Semester

160 T 6:20 Campus Psychology 115,
Longstaff

Second Semester

161 T 6:20 Campus Psychology 115,
Longstaff

Other Personnel classes. See pages 19 and 37.

The Psychology of War. No credit. \$6.

Ten lectures in the applied psychology of war. Basic psychological facts involved in civilian and military morale, propaganda, rumor, and prejudice. Psychology as used by the Axis powers; the causes of war; the effect of the stresses of war on the individual; mental health and disease. No prerequisite.

First Semester

M 6:20 Campus Psychology 211, Crook, Harris

RADIO

How To Listen to the Radio. No credit. \$10.

The millions of Americans listen to the radio every day, few of us know how to get the most out of this important source of information and enjoyment. This course aims to make radio the efficient servant it can become for each of us. It will point out sources of information about programs, clear up deaf spots in listening habits, and suggest standards for evaluation and criticism. No prerequisite.

First Semester

M 6:20 Campus Murphy 302, Weaver

Radio Script Writing I. No credit. \$10.

Fundamentals of writing "for the ear." Designed for amateurs in radio writing and for all writers; also for educators, advertisers, and public service executives. Students are encouraged to select script subjects to fit their particular interests or jobs. Students begin with brief announcements and build longer radio programs of drama, interview, news, etc. Handling of sound effects and music. Evaluation of current radio programs. Selected work may be presented on WLB or other stations. Prerequisite: a good command of English.

First Semester

Th 6:20 Campus Murphy 302, Weaver

Radio Script Writing II-III. No credit. \$10.

Basic plan: writing a series of 15-minute or longer programs for consecutive presentation on the air. Students set up projects in their own fields of interest or work. Experimentation is encouraged. Selected work frequently presented on WLB, or other stations. Students may register for either II or III since assignments are individualized.

Second Semester

Th 6:20 Campus Murphy 302, Weaver

Radio Speech (Speech 65). 3 credits. \$10 plus \$1 laboratory fee.

Speech art and psychology of the radio; announcing and broadcasting; radio speech; radio drama; interpretive reading, voice, diction, articulation, and pronunciation. Practice, exercises, projects, and reports on problems of appeal and audience response. Voice recordings will be made. Repeated second semester. Prerequisite: Speech 1-2-3.

First Semester

W 6:20 Campus Murphy 302, Ziebarth

Second Semester

W 6:20 Campus Murphy 302, Ziebarth

Radio Drama (Speech 66). 3 credits. \$10.

Dramatic production and the radio—a study of the fundamental problems of directing and acting radio drama. Projects and reports on types and appeals of material and production methods; exercises in characterization, voice, and diction. Prerequisite: Speech 1-2-3; recommended, Speech 65.

First Semester

W 8:05 Campus Murphy 302, Lees

Wartime Propaganda and Censorship. See page 17.

Other Speech classes. See page 28.

Other Writing classes. See page 10.

Electrical Engineering. See page 40.

RECREATION

Note that these recreational activities are offered in three groups: for women only, for both men and women, for men only. Unless otherwise designated, all classes meet one hour per week, carry no credit, and require no prerequisites.

Activities Open Only to Women

On University Farm Campus (St. Paul)

Swimming—for Women. \$5.

Instruction for beginning, intermediate, and advanced swimmers; water emergency tests; strokes; diving; lifesaving. University furnishes regulation suits. Health examination at first meeting.

First Semester

T 7:30 Univ. Farm Gym., Eibner
Th 6:30 Univ. Farm Gym., Eibner

Second Semester

T 7:30 Univ. Farm Gym., Eibner
Th 6:30 Univ. Farm Gym., Eibner

Recreational Gymnastics and Plunge—for Women. \$5.

Instruction and practice in body-building and posture exercises for 30 minutes, followed by 15-minute swim.

First Semester

T 6:30 Univ. Farm Gym., Eibner
F 10:00 a.m. Univ. Farm Gym., Eibner

Second Semester

T 6:30 Univ. Farm Gym., Eibner
F 10:00 a.m. Univ. Farm Gym., Eibner

On Main Campus

Beginning, Intermediate, and Advanced Swimming—for Women. \$5.

For beginners and those who want to increase their skill in strokes and diving. A health examination, for which a fee of 50 cents is charged, will be given at the first class meeting. University furnishes regulation suit and towel for a fee of 10 cents.

First Semester

M 6:30 Campus Women's Gym. 51, Starr

Second Semester

M 6:30 Campus Women's Gym. 51, Starr

Beginning Golf—for Women. \$5.

Class and individual instruction in the use of the brassie, midiron, mashie, and putter. Discussion of rules, golf etiquette, and terminology. Last few lessons at University Golf Course. Class limited to 25. Equipment (clubs and soft balls) furnished by students.

First Semester

T 6:30 Campus Women's Gym. 60,
Christensen

Second Semester

T 6:30 Campus Women's Gym. 60,
Christensen

Intermediate Golf—for Women. \$5.

First ten weeks: class and individual instruction in the use of the brassie, midiron, mashie, and putter; next seven weeks: supervised play at the University Golf Course. Students furnish own clubs. Class limited to 25. Prerequisite: some knowledge of and experience in golf.

Second Semester

M 6:30 Campus Women's Gym. 60, Snell

Beginning Tennis—for Women. \$5 plus court fees (25 cents each time or \$1 for season, payable at courts).

Group and individual instruction. First eleven weeks' instruction given indoors; last six weeks' at the university tennis courts. Individual practice for the improvement of strokes, working with the tennis robot. Students furnish own tennis rackets and balls.

Second Semester

T 6:00 Campus Women's Gym. 151, Tenney

Tennis Techniques for Teachers—for Women. \$5 plus court fees (25 cents each time or \$1 for season, payable at courts).

Includes analysis and practice of the fundamental strokes, organization and methods of instruction, demonstration and discussion of visual aids useful in teaching tennis.

First Semester

T 6:00 Campus Women's Gym. 151, Tenney

Rhythmic Exercise for Physical Fitness—for Women. \$5.

Rhythmic exercise, group and individual, for general body control with special emphasis on streamlining the figure; posture, carriage, and relaxation.

First Semester

M 6:30 Campus Women's Gym. 153, Kelly

Second Semester

M 6:30 Campus Women's Gym. 153, Kelly

Recreational Games for Fitness—for Women. \$5.

Instruction in games useful for recreational purposes and for keeping physically fit. Games will be preceded by setting-up exercises.

First Semester

M 6:30 Campus Women's Gym. 151, Snell

Activities Open Only to Men**Golf—for Men. \$5 plus \$1 laboratory fee.**

The fundamentals of golf. Motion pictures or stereopticon slides show proper form of stroke. Eight to ten meetings for pictures, lectures, etc., will be held on Monday nights beginning February 8. Lessons or appointments with competent golf instructors in the golf gymnasium will be scheduled for Tuesday, Wednesday, Thursday, or Friday evenings between February 17 and April 10. The last five meetings will be held, weather permitting, at the University Golf Course, where various professionals will assist. The outdoor schedule is adjusted to light. Students will furnish their own clubs.

Second Semester

M 7:00 Campus Cooke Hall 205, Smith

Physical Development—for Men. \$5.

Exercises based on individual needs. Includes calisthenics, weight lifting, apparatus work, dual sports, and recreational activities. Adaptable for handicapped individuals.

First Semester

T 7:00 Campus Stadium 264, Osell

Swimming—for Men. \$5.

Class and individual instruction for beginners in all swimming strokes, in diving, in senior lifesaving; preparation for Red Cross examinations. Woolen bathing suits not permitted. Health examination at first meeting. Other sections arranged on demand.

First Semester

T 8:05 Campus Cooke Hall, Thorpe

Second Semester

T 8:05 Campus Cooke Hall, Thorpe

Activities Open to Both Men and Women**American Country Dancing—for Men and Women. \$5 plus \$1 laboratory fee.**

A recreational course reviving old American quadrilles, contradances, the schottische, polka, mazurka, Viennese waltz, and the more popular European folk dances.

First Semester

W 7:00 Campus Women's Gym 151

Second Semester

W 7:00 Campus Women's Gym 151

Badminton Club—for Men and Women. One period, 5 months, \$7.

Four periods per week, as scheduled below, will be devoted to playing the game. Registration will be by periods, with a maximum of 16 players accepted for each. Prospective students should register at the campus office of the General Extension Division to insure acceptance in any period. Registration may be for more than one period per week. Students furnish own rackets and shuttlecocks.

Periods: 6:00 to 7:30 p.m., and 7:30 to 9:00 p.m., Cooke Hall gymnasium, Monday and Friday, beginning September 28 and continuing through February with a recess at Christmas. In addition to the regular class periods, those registered may use the badminton courts when available for general intramural play. In charge: Smith, Bowman.

See also **Art**, p. 5; **Birds of Minnesota**, p. 19; **Gardening**, p. 12; **Minnesota Plant Life**, p. 7; **Music**, p. 18; **Photography**, p. 20; **Stamp Collecting**, p. 20.

ROMANCE LANGUAGES

See **French**, p. 12; **Portuguese**, p. 22; **Spanish**, p. 28.

RUSSIAN**1-2 Beginning Russian. 3 credits each semester. \$10.**

A beginning course with emphasis on reading and conversation. Useful for those who want an introduction to the Russian language, for those preparing for graduate reading examinations, for those wanting pronunciation training for singing, etc. No prerequisite.

First Semester

1 Th 6:20 Campus Folwell 109, Thielman

Second Semester

2 Th 6:20 Campus Folwell 109, Thielman

SCANDINAVIAN

1-2 Beginning Norwegian. 3 credits each semester. \$10.

Elements of grammar, conversation, simple composition, selected readings of easy prose and poetry; a simple Bjornson classic in second semester. No prerequisite.

First Semester

1 M 6:20 Mpls. YMCA 203, Farseth

Second Semester

2 M 6:20 Mpls. YMCA 203, Farseth

5-6 Norwegian Conversation. 3 credits each semester. \$10.

Introduction to Norwegian life by means of conversation, the singing of folk songs, and the reading of selected prose and poetry. This course aims to teach the student, by means of simple exercises of various kinds, to think directly and instinctively in Norwegian. No prerequisite.

First Semester

5 W 6:20 Mpls. YMCA 203, Farseth

Second Semester

6 W 6:20 Mpls. YMCA 203, Farseth

7-8 Beginning Swedish. 3 credits each semester. \$10.

Grammar, composition, conversation, reading of selected prose. No prerequisite.

First Semester

7 T 8:05 Campus Folwell 12, Gustafson

Second Semester

8 T 8:05 Campus Folwell 12, Gustafson

21 Scandinavian Life Today and Yesterday. 2 credits. \$7.

An introduction to some of the more important aspects of modern Scandinavian life: its political, economic, social, and educational organization; characteristic trends in its fine and applied arts; and certain important phases of its literary development in the last two generations. Required reading available in English. 11 meetings. No prerequisite.

First SemesterW 6:20 American Institute of Swedish Arts,
Literature, and Science, Gustafson**53-54 Advanced Readings in Swedish Literature.** 3 credits each semester. \$10.

Readings in representative modern Swedish authors, accompanied by background lectures, concentrating chiefly on an intensive examination of the work of August Strindberg and some of his more important contemporaries and successors. Prerequisite: a reading knowledge of Swedish.

First Semester

53 T 6:20 Campus Folwell 12, Gustafson

Second Semester

54 T 6:20 Campus Folwell 12, Gustafson

SOCIOLOGY AND SOCIAL WORK

Classes in Sociology

(Prerequisite to technical social work classes)

1 Introduction to Sociology. 3 credits. \$10.

A study of the culture of human society and the effect upon it of such influences as location, sex, race, custom, invention; culture patterns, processes, and social interactions; social change and means of control. Repeated second semester. No prerequisite.

First SemesterT 6:20 Campus Jones 209, Monachesi
Th 6:20 St. P. Ext. Center 217, Schneider**Second Semester**

T 6:20 Campus Jones 104, Monachesi

6 Social Interaction. 3 credits. \$10.

Practical consideration to crisis problems such as race prejudice, intolerance, class tensions, morale, wartime adjustments, attitudes, public opinion, propaganda, and leadership. Totalitarian and democratic interaction patterns. Proposals for constructive control of social interaction. Designed for teachers, social workers, and others interested in human relationships. Prerequisite: Sociology 1.

Second Semester

M 6:20 Campus Jones 109, Kirkpatrick

14 Rural Sociology. 3 credits. \$10.

Principles of sociology applied to the position of an agricultural class in an industrial society; the contributions and obligations of farmers to the larger society, and vice versa. Prerequisite: Soc. 1.

First Semester

M 6:20 Campus Folwell 110, Tannous

49 Social Pathology. 3 credits. \$10.

A survey course in contemporary social problems with especial emphasis on the conditions and processes in personal demoralization and social disorganization. The scientific approach to the study of poverty, physical diseases and defectiveness, feeble-mindedness, insanity, vagrancy, etc. Prerequisite: 10 credits in soc., or Soc. 1 and 10 credits in soc. sci. or psy.

First Semester

W 6:20 Campus Jones 109, Sletto

64 Human Behavior Mechanisms. 3 credits. \$10.

A discussion of normal and abnormal behavior, emphasizing the latter, especially its relation to problems met by the social worker. Application of psychoanalysis in understanding abnormal behavior. Prerequisite: 6 credits in soc. and 6 credits in psy.

First Semester

M 6:20 St. P. Wilder Disp., Lippman

96 Recent Social Trends. 3 credits. \$10.

Social changes in the United States since 1890 with emphasis upon their relationships to problems of human welfare, social control, and social reorganization. Prerequisite: Soc. 1 or 10 credits in soc. sci.

Second Semester

Th 6:20 Campus Jones 109, Schneider

110 Rural Organization. 3 credits. \$10.

Social organization as it affects living conditions in small towns and rural districts. Especially designed for rural as well as other social workers, teachers, and specialists in rural sociology or agricultural economics. Prerequisite: 4 courses in soc., or Soc. 1 and 15 credits in soc. sci., ed., phil., or psy.

Second Semester

M 6:20 Campus Folwell 110, Tannous

119 Contemporary Marriage Problems. 3 credits. \$10.

A practical survey of problems of family life as complicated by war. Problems of sex and courtship, prediction of marital success, technique of marital adjustment, economic readjustments necessitated by the war, maintenance of reproductive and educational functions of the family in spite of wartime insecurity. Emphasis is placed upon adjustment to the breaking of family ties caused by the draft, bereavement, captivity, work away from home, and by population movements. No prerequisite.

First Semester

M 6:20 Campus Jones 109, Kirkpatrick

The School and the Social Order. See page 9.**Classes in Social Work**

These classes are open to persons employed in social work positions who are recommended by the executive of the agency in which they are employed and approved by an adviser in the School of Social Work. In satisfaction of requirements for membership in professional social work organizations, the courses listed are accounted as "technical social work" courses.

79 The Philosophy of Social Work. 3 credits. \$10.

Forces and thought that have influenced the changing attitudes toward social problems and social responsibility. Prerequisite: 90 Survey of Social Work or equivalent.

Second Semester

T 8:05 Campus Jones 2, Towley

89a Testing and Counseling Techniques for Social Case Workers: Part I, The Use of Test Materials in Case Work. 3 credits. \$10.

Discussions of various judgment-making devices including psychological tests in the following areas of human behavior: general ability; special aptitude; achievement and proficiency; occupational interests; personality and attitudes. Case histories will be presented and problems of reliability and validity of observations will be studied. Prerequisite: consent of a social work adviser and of the instructor.

First Semester

T 6:20 Campus Eddy 106, Darley

89b Testing and Counseling Techniques for Social Case Workers: Part II, The Interview As a Counseling Technique. 3 credits. \$10.

Procedures in interviewing with class demonstrations and participation; interpretation of case data as well as effective interview procedures in therapy and follow-up work. Prerequisite: consent of a social work adviser and of the instructor.

Second Semester

T 6:20 Campus Eddy 106, Darley

N.B.—These courses may be counted as Social Work 89a-89b or, singly, as Educational Psychology 88. The courses should be taken consecutively, but may be taken separately.

127 Legal Aspects of Social Work. 3 credits. \$10.

A selected group of legal problems treated from the viewpoint of the social worker. Not designed to teach technical law, but to furnish a background for understanding social problems having legal implications. Prerequisite: Soc. 1 and 49.

First Semester

M 6:20 Campus Folwell 109, Bachelor

SPANISH**1-2 Beginning Spanish. 3 credits each semester. \$10.**

Grammar, pronunciation, reading, and practice in speaking. No prerequisite.

First Semester

1 M 6:20 Campus Folwell 227, Grismer
T 6:20 St. P. Ext. Center 216, Le Fort
W 5:00 Mpls. N.W. Bank Bldg. 690,
Embry

Second Semester

2 M 6:20 Campus Folwell 227, Grismer
T 6:20 St. P. Ext. Center 216, Le Fort
W 5:00 Mpls. N.W. Bank Bldg. 690,
Embry

3-4 Intermediate Spanish. 3 credits each semester. \$10.

Review, composition, readings from modern authors. Attention to correspondence and commercial practice if desired. Prerequisite: Spanish 1-2 or 2 years of preparatory Spanish.

First Semester

3 M 6:20 St. P. Ext. Center 220, Cúneo
T 6:20 Campus Folwell 201, Spiegel

Second Semester

4 M 6:20 St. P. Ext. Center 217, Cúneo
T 6:20 Campus Folwell 201, Spiegel

53-54 Spanish Composition and Conversation. 3 credits each semester. \$10.

Practical composition, including correspondence and conversation. Prerequisite: Spanish 3-4.

First Semester

53 T 6:20 Campus Folwell 209, Cúneo

Second Semester

54 T 6:20 Campus Folwell 209, Cúneo

SPEECH (PUBLIC SPEAKING)**1-2-3† Fundamentals of Speech. 3 credits each semester. \$10 plus \$1 laboratory fee.**

Speech as a means of social adaptation and control; techniques of body and voice; organization of speech material and study of types of speeches; practice for correctness and effectiveness in presentation. Voice recordings. No prerequisite.

First Semester

1 M 8:05 Campus Folwell 308, Ziebarth
T 6:20 St. P. Ext. Center 214, Gilkinson
2 M 8:05 Campus Folwell 308, Ziebarth
T 6:20 St. P. Ext. Center 214, Gilkinson
3 M 8:05 Campus Folwell 308, Ziebarth
T 6:20 St. P. Ext. Center 214, Gilkinson

Second Semester

1 M 8:05 Campus Folwell 308, Ziebarth
T 6:20 St. P. Ext. Center 214, Gilkinson
2 M 8:05 Campus Folwell 308, Ziebarth
T 6:20 St. P. Ext. Center 214, Gilkinson
3 M 8:05 Campus Folwell 308, Ziebarth
T 6:20 St. P. Ext. Center 214, Gilkinson

Beginning Practical Speech Making. No credit. \$10 plus \$1 laboratory fee.

A beginning course for business and professional people who are desirous of learning to speak extemporaneously so that their ideas may be presented in an organized way and expressed with confidence and effectiveness; individual attention to cases of nervousness or embarrassment. Each student speaks before the class each meeting. Beginning classes each semester; students may continue in Advanced Practical Speech Making. Voice recordings will be made. No prerequisite.

First Semester

M 6:20 Campus Folwell 5, Nichols
W 6:20 Campus Folwell 5, Nichols

Second Semester

M 6:20 Campus Folwell 5, Nichols

Advanced Practical Speech Making. No credit. \$10 plus \$1 laboratory fee.

An advanced course for business and professional people who are desirous of developing skill in extemporaneous speaking dealing with life problems and public questions; individual attention to special problems. Each student speaks before the class each meeting. Voice recordings will be made. Open only to students who have completed Beginning Practical Speech Making, except by special permission of instructor.

First Semester

W 6:20 Campus Folwell 5, Nichols

Second Semester

M 6:20 Campus Folwell 5, Nichols

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

The Speaking Voice. No credit. \$10.

The study and practice of principles of voice production; breathing, voice placement, melody, voice quality, the sounds of English speech; practice in articulation, phrasing, and connected speech in public speaking and oral reading of poetry and prose. Repeated second semester. No prerequisite.

First Semester

Th 6:20 Campus Folwell 308, Hurd

Second Semester

Th 6:20 Campus Folwell 308, Hurd

61 Speech Hygiene I-II. 1st semester, 3 credits; 2nd semester, 3 credits for certificate. \$10.

A study of: behavior as indicated through speech; basic elements in the development of unsocial and inadequate emotional patterns; speech symptoms evaluated from cause and effect relations; psychologic and social factors in speech, analysis of individual problems of self-consciousness, stage fright, and general ineffective conversational speech; speech as a means of self and social control in daily living. Prerequisite: Speech 1-2-3.

First SemesterI T 6:20 Campus Folwell 308,
Bryngelson**Second Semester**

II T 6:20 Campus Folwell 308, Bryngelson

65 Radio Speech. See page 23.**Elimination of Foreign Accent.** No credit. \$10 plus \$1 laboratory fee.

Designed to help persons with foreign accents eliminate the outstanding characteristics which make their pronunciations different from American English. Not a course in grammar or in English vocabulary. Not intended for the foreign student who is not yet acquainted with the English language. Drills and assignments to meet individual needs. A voice record will be made at the beginning and at the end of the course. No prerequisite except English vocabulary adequate for the purposes of communication, and ability to read English.

First Semester

T 7:00 Campus Folwell 322, Hurd

Second Semester

T 7:00 Campus Folwell 322, Hurd

Vocabulary Building I. No credit. \$5 plus \$1 materials fee.

A practical course designed to increase students' speaking and reading vocabularies. Mimeographed matter, in lieu of text, issued each meeting. Home study suggested but not required. Not a recitation class. Meets weekly for one hour. No prerequisite.

First SemesterM 6:20 Campus Folwell 322, Dreher
W 6:20 St. P. Ext. Center 219, Dreher**Second Semester**M 6:20 Campus Folwell 322, Dreher
W 6:20 St. P. Ext. Center 219, Dreher**Vocabulary Building II.** No credit. \$5 plus \$1 materials fee.

A more advanced and detailed study of words. Includes written composition, exercises, reports, tests; not a recitation class; home study recommended. May be taken as a continuation of Course I, or together with it. Meets weekly for one hour. No prerequisite.

Second SemesterM 6:20 Campus Folwell 322, Dreher
W 6:20 St. P. Ext. Center 219, Dreher**SURVEY OF NATURAL AND SOCIAL SCIENCES****1-2 Man in Nature and Society.** 3 credits each semester. \$10.

A survey of certain aspects of contemporary thought concerning the specific natural and social sciences; designed for the layman. Class 1, natural sciences; Class 2, social sciences. No laboratory work and no knowledge of science required. No prerequisite.

First Semester

1 T 6:20 Campus Folwell 113, Shaw

Second Semester

2 T 6:20 Campus Folwell 113, Shaw

THEATER**G.C. 25A Film and Drama Today.** 3 credits in General College. \$10 plus \$2 laboratory fee.

The aim of this class is to increase the entertainment value of the film and the drama by developing a more aware, a more appreciative, and consequently, a more demanding audience. Designed for those who wish to increase their enjoyment of the theater. Actual playgoing is also a part of the course. The laboratory fee covers admission to five movies of the University Film Society and to three plays of the University Theatre. No prerequisite.

First Semester

Th 8:05 Campus Folwell 124, Hamilton

GENERAL CLASSES

Beginning Acting (Speech 32-33†). 3 credits each semester. \$10 plus \$1 laboratory fee.

Creative and technical approaches. Designed particularly for the student interested in gaining skill in self-expression. A study of the art of pantomime based upon observation and memory recall. Underlying principles of stage technique and voice. Exercises and projects in characterization and work in University Theatre. Students may register for either class either semester and are eligible for tryout in construction and acting phases of University Theatre activities. Prerequisite: Speech 1-2-3 (or 4-5) or concurrent registration, and Speech 31.

First Semester

T 6:20 Campus Music 19, Lees

Second Semester

T 6:20 Campus Music 19, Lees

Radio Drama. See page 23.

ZOOLOGY

1-2ex† General Zoology. 5 credits each semester. \$17.

Structure, physiology, embryology, classification, genetics, and evolution of animals. Equivalent to Zool. 1-2-3 in day class. No prerequisite.

First Semester1 MW 6:20 Campus Zool. 211,
Wodsedalek**Second Semester**2 MW 6:20 Campus Zool. 211,
Wodsedalek

Birds of Minnesota. See page 19.

Fish and Fishing in Minnesota. See page 12.

* Students registered in starred classes are eligible for tryout in construction and acting phases of University Theatre activities.

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

BUSINESS CLASSES

For advice on programs of study leading to extension certificates in business or to a degree in the School of Business Administration, consult the Students' Work Committee, Room 409, Administration Building.

ACCOUNTING

Accounting classes are listed in two groups: Sequence Classes and Special Interest Classes. Students who are beginning the study of accounting should take the Introductory Sequence (consisting of the basic class, Econ. 20L-25L Principles of Accounting and Accounting Laboratory, and B.A. 150-151 Accounting Practice and Procedure) and then go on with the advanced sequences: Cost Accounting, Auditing, Advanced Accounting, Financial Interpretation. Students with special interests will want to take certain of the Special Interest Classes.

Sequence Classes

Introductory Accounting Sequence

Econ. 20L-25L† Principles of Accounting and Accounting Laboratory. 4 credits each semester. \$13.50 plus \$1 materials fee.

Lectures and discussion with working out of selected cases; compilation of accounting data; balance sheets; operating statements, accounting records, adjustment of accounts, accounting work sheets; the principles underlying the computation of profit and loss and the statement thereof. No prerequisite.

First Semester				Second Semester			
20L	M	6:20	Campus Vincent 307, Smith	25L	M	6:20	Campus Vincent 307, Smith
	M	6:20	St. P. Ext. Center 218, Montgomery		M	6:20	St. P. Ext. Center 218, Montgomery
	T	6:20	Campus Vincent 307, Ostlund		T	6:20	Campus Vincent 307, Ostlund
	Th	6:20	Mpls. N. W. Bank Bldg. 664, Smith		Th	6:20	Mpls. N. W. Bank Bldg. 664, Smith
	F	6:20	St. P. Ext. Center 218, LeBoriosis		F	6:20	St. P. Ext. Center 218, LeBoriosis

N.B.—The following combined course offers Accounting 20L-25L complete in one semester—20L the first eight weeks and 25L the second eight weeks. Fees: \$13.50 each course plus \$1 materials fee in St. Paul class. Registration and fees accepted for combined course or for one class at a time, either class.

Second Semester			
	MF	6:20	Campus Vincent 306
	TTh	6:20	St. P. Ext. Center 218, LeBoriosis and Montgomery

B.A. 150-151† Accounting Practice and Procedure A and B. 3 credits each semester. \$10 plus \$1 materials fee.

Practice in the peculiar accounting problems of business and the particular skills of the practicing accountant. Prerequisite: Econ. 20L-25L or equivalent.

First Semester				Second Semester			
150	M	6:20	St. P. 1st Natl. Bank 904, East, LeBoriosis (Organized for A.I.B. members but open to others also.)	151	T	8:05	Campus Vincent 113, Houston
	T	8:05	Campus Vincent 113, Houston		W	6:20	St. P. Ext. Center 218, Rotzel
	W	6:20	St. P. Ext. Center 218, Rotzel				

Accounting Practice and Procedure C and D. 3 credits each semester for certificate. \$10 plus \$1 materials fee.

Continuation of B.A. 150-151 Accounting Practice and Procedure A and B. Advanced phases of accounting, corporate consolidation of accounts, reorganization and refinancing of corporations. Prerequisite: see instructor.

First Semester				Second Semester			
	T	6:20	Campus Vincent 113, Sevenich		T	6:20	Campus Vincent 113, Sevenich
	W	8:05	St. P. Ext. Center 218, Sevenich		W	8:05	St. P. Ext. Center 218, Sevenich

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

Cost Accounting Sequence**B.A. 152-153† Beginning Cost Accounting.** 3 credits each semester. \$10.

Principles used to determine the profitableness of each branch of manufacturing, and basis for judging the relative efficiencies of operation; materials, labor, and burden; continuous process and production order costs; burden distribution methods, standard costs, etc. Prerequisite: Econ. 25L or equivalent.

First Semester

152 T 6:20 Campus Vincent 115, Rotzel
W 8:05 St. P. Ext. Center 216, Tuttle

Second Semester

153 T 6:20 Campus Vincent 115, Rotzel
W 8:05 St. P. Ext. Center 216, Tuttle

B.A. 133 Standard Costs. 3 credits. \$10.

Methods of standard costs; meaning of standards; setting of standards for materials, labor, and overhead; analysis of and accounting for variations; development and application of standards to distribution as well as to production activities. Prerequisite: see instructor.

First Semester

T 6:20 St. P. Ext. Center 219
T 8:05 Campus Vincent 115, Rotzel

Auditing Sequence**B.A. 135 Auditing and Public Accounting.** 3 credits. \$10.

The application of principles and technical methods used in professional auditing practice. Typical frauds and errors in accounting records; auditors' working papers, financial exhibits, certificates, and reports are studied. Prerequisite: B.A. 139 or 150-151.

First Semester

M 6:20 Campus Vincent 113, Reighard
W 8:05 St. P. Ext. Center 219, Rotzel

B.A. 136 Internal Auditing and Accounting Control. 3 credits. \$10.

Accounting systems and methods as related to internal check and audit control of routine transactions, and the establishment of administrative and budgetary control. Prerequisite: B.A. 139 or 150-151.

Second Semester

M 6:20 Campus Vincent 113, Reighard
W 8:05 St. P. Ext. Center 219, Rotzel

Advanced Accounting Sequence**B.A. 180A Accounting Topics—Budgetary Control.** 3 credits. \$10.

Budget systems in business—types and kinds; budgeting of every sort of item; budget administration, committees, etc.; budget reports and statements—form, content, and use; problem studies, solutions; recent developments in foundations for budgetary control. Prerequisite: see instructor.

Second Semester

T 8:05 Campus Vincent 115, Rotzel

Constructive Accounting. 3 credits for certificate. \$10.

The design and installation of a modern accounting system; the make-up of various forms for use in the system—purchase orders, receiving slips, invoices, requisitions, shop tickets, etc.; design and ruling of books of original entry; ledgers of various kinds. Prerequisite: see instructor.

First Semester

W 6:20 St. P. Ext. Center 216, Tuttle.

Accounting Systems. 3 credits for certificate. \$10.

Classification of industry according to types of accounting problems; special features of each; constructive, operative, and interpretative features. Case method used. Prerequisite: see instructor.

Second Semester

W 6:20 St. P. Ext. Center 216, Tuttle

Financial Interpretation Sequence**Econ.26 Intermediate Accounting.** 3 credits. \$10.

A comparative study of various accounting procedures which result in different concepts of balance-sheet valuation and income determination. Econ. 26 and B.A. 139 together constitute a one-year course for students interested in financial and investment work where training in analysis and interpretation of accounting statements is necessary. Prerequisite: Econ. 20L-25L.

First Semester

W 6:20 Campus Vincent 307, Ostlund

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

B.A. 139 Advanced General Accounting. 3 credits. \$10.

Primarily for the general business student. Interpretation of balance sheets and statements, particularly as found in corporation and investment publications; preparation, analysis, and utilization of statements; holding company and consolidated statements. Prerequisite: Econ. 26.

Second Semester

W 6:20 Campus Vincent 205, Heilman

Special Interest Classes**Elements and Principles of Accounting (A.I.B.) I and II. 3½ credits. \$12.50.**

A special class, primarily for members of the American Institute of Banking, Minneapolis chapter, covering the essentials of Econ. 20L and 25L, for which see p. 31. Students completing receive 7½ credits and may continue with advanced classes in accounting. Begins September 22. No prerequisite.

First Semester

I TF 6:35 McKnight Bldg. 250, Lund

Second Semester

II TF 6:35 McKnight Bldg. 250, Lund

B.A. 134 Income Tax Accounting. 3 credits. \$10.

Application of income tax laws to various business conditions; possible errors in preparation of income tax reports; state and federal problems. Prerequisite: B.A. 151.

First Semester

M 6:20 St. P. Ext. Center 216, Connolly
T 8:05 Campus Vincent 105, Connolly

B.A. 134ex Income Tax Accounting Survey. 2 credits. \$7.

A brief survey of current regulations and principles governing the preparation of tax returns from accounting and other records. Eleven meetings beginning January 7. No prerequisite.

First Semester

Th 6:20 Campus Vincent 113, Reighard

B.A. 158 Governmental Accounting. 3 credits. \$10.

Use of budgetary and financial accounts; fund accounting and statements; consolidated municipal statements; accounting for fixed properties, depreciation, improvements, special assessments, and revolving funds; debt service and sinking fund. Prerequisite: B.A. 139 or 151.

First Semester

W 6:20 Campus Vincent 205, Heilman

ADVERTISING**Psy. 56 Psychology of Advertising. 3 credits. \$10.**

Analysis of advertising, national and local, from the standpoint of attention, memory, desire, and action; experimental techniques for investigating advertising problems. Special attention to advertising problems created by the war. Of fundamental value to all advertisers. Prerequisite: Psy. 1-2 and Econ. 6-7.

First Semester

M 6:20 Campus Psychology 115, Longstaff

B.A. 88 Elementary Advertising. 3 credits. \$10.

Covers two important phases of advertising: the place of advertising in business and advertising procedure. Attention to planning an advertising campaign, including market research, appropriations, choice of media, scheduling, preparation of copy, and layout. Prerequisite: B.A. 77 and Psy. 56.

Second Semester

M 6:20 Campus Vincent 112 Chute

Publicity and Public Relations. See page 17.

Radio Script Writing. See page 23.

Selling by Mail. See page 37.

BUSINESS ADMINISTRATION

B.A. 89 Business Organization and Management. 3 credits. \$10.

Survey of the procedures used and the problems of co-ordination and control in both large and small business organizations. Commercial, office, financial, and marketing aspects are considered in conjunction with production operations. Consideration is also given to job analysis, incentives, and their relation to cost and price structures. No prerequisite.

First Semester

Th 6:20 Campus Vincent 301, Thompson

Hotel Organization and Operation. No credit. \$10.

This course will deal with the fundamentals of hotel organization and operation. Instruction will be given by qualified experts, through lectures, demonstrations, and discussion. First semester: types of hotels; location; site; patronage; promotion and methods of advertising; organization charts and their application; front office practice; legal terms; credit and protective departments; catering and food service; preparation of food; steward's department; beverage service. Second semester: service departments; sales and convention promotion; housekeeping and laundry management; interior decorating; study of hotel textiles; hotel inspection tours; hotel law; personnel; employer-employee relations. No prerequisite but first semester must precede second.

First Semester

M 8:05 Hotel Nicollet, Parlor D, Nichols
and others

Second Semester

M 8:05 Hotel Nicollet, Parlor D, Nichols
and others

Building Maintenance. No credit. \$10.

The work of the janitor in office buildings, hotels, hospitals, schools, stores, and factories. Lectures, demonstrations, and discussion on everyday problems of maintenance: sweeping, mopping, scrubbing, waxing; cleaning of furniture and woodwork, glass, electric fixtures, metal, plumbing, rugs and carpets, shades, and walls; reconditioning, treatment, and maintenance of such types of floors as asphalt, concrete, linoleum, rubber, terrazzo, tile, and wood. Based on actual performance of standard chemical supplies and standard janitorial tools and equipment. No prerequisite.

First Semester

Th 6:20 Campus Vincent 211, Olsen

BUSINESS ENGLISH

1ex Business English. 3 credits for certificate. \$10.

A practical class for business people who recognize the value of good English in business and in general writing and conversation. Various kinds of business writing are studied with some attention to letter types; application of good grammar and correct forms in all business writing. No prerequisite.

First Semester

M 6:20 Campus Folwell 105, Haga
Th 6:20 St. P. Ext. Center 214, Guthrie

Second Semester

M 6:20 Campus Folwell 101, Guthrie

2ex Business Correspondence. 3 credits for certificate. \$10.

A more advanced class with less emphasis on grammar and mechanics. Practical adaptations of successful letter writing to specialized correspondence under such headings as: executive problems, personnel, and financial. Each student will work out an individual communications project related to his own most imperative business needs. No prerequisite, but Business English or its equivalent is, for practical reasons, strongly recommended.

Second Semester

M 6:20 Campus Folwell 105, Haga

BUSINESS LAW

B.A. 51-52-53†, 54 Business Law. 3 credits each semester; 51, 52, 53 must be completed before credit for degree is granted; 51, 52, and either 53 or 54 for extension certificate. \$10 plus \$1 materials fee.

Comprehensive course in the fundamental principles of law for the business and professional man. B.A. 51: contracts—formation, operation, transfer, discharge; agency—creation, nature, and terms of the relation, rights, and liabilities of the parties. B.A. 52: organization, management, and responsibility of association; business trusts; partnerships and corporations; bankruptcy. B.A. 53: personal property and transactions concerning it; law of sales, of bailments, and the Uniform Negotiable Instruments and Bills of Lading acts. B.A. 54: nature and classification of real estate; deeds and conveyances; landlord and

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

tenant; recording and abstracting; Torrens titles; liens and mortgages; wills, probating of estates, and duties of administrators and executors. No prerequisite but B.A. 51 should precede other classes.

First Semester				Second Semester			
51	M	6:20	St. P. Ext. Center 212, Jackman	51	M	8:05	St. P. Ext. Center 216, Jackman
	T	6:20	Campus Vincent 207, Jackman		T	8:05	Campus Vincent 207, Jackman
	W	6:20	Campus Vincent 207, Jackman		W	6:20	Campus Vincent 207, Jackman
53	T	8:05	Campus Vincent 207, Jackman	53	M	6:20	St. P. Ext. Center 216, Jackman
54	M	8:05	St. P. Ext. Center 212, Jackman		T	6:20	Campus Vincent 207, Jackman

ECONOMICS

Econ. 3 Elements of Money and Banking. See page 36.

Econ. 5 Elements of Statistics. See page 38.

Econ. 6-7† Principles of Economics. 3 credits each semester. \$10.

Fundamental principles underlying the economic activities of society; utility and valuation; prices and the cost of production; the factors of production; division of labor and its relation to the development of industry; wages, rent, interest; capitalization, enterprise, business profits. Fundamental to the study of any business subject. No prerequisite.

First Semester				Second Semester			
6	M	6:20	St. P. Ext. Center 214, Myers	6	W	6:20	Campus Vincent 210, Graves
	Th	8:05	Campus Vincent 207, Graves	7	M	6:20	St. P. Ext. Center 214, Myers
					Th	8:05	Campus Vincent 207, Graves

Econ. 103-104† Advanced Economics—Competition, Monopoly, and Inequality of Incomes. 3 credits each semester. \$10.

An advanced course in economic theory, prices, and costs; the value theory; the distribution of wealth—causes and effects of inequality; the distribution of income—inequality, rent, wages, interest, and profits. May be substituted for B.A. 101-102 in requirements for degree in business. For prerequisite consult instructor.

First Semester				Second Semester			
103	Th	6:20	Campus Vincent 205, Waite	104	Th	6:20	Campus Vincent 205, Waite

Econ. 126 Economic Problems of Latin America. 3 credits. \$10.

The development of economic resources; influence of foreign economics; organization for production; state of the industrial arts; domestic markets and transportation; government finance; present tendencies in respect to economic progress, economic security, and social control. Prerequisite: Econ. 6-7.

First Semester			
T	6:20	Campus Vincent 205, Myers	

Econ. 149 Business Cycles. 3 credits. \$10.

A critical examination of business cycle theory, with a discussion of proposed methods for eliminating or moderating industrial fluctuation. The relation of business cycles or industrial fluctuations to: the wage system; the influence of machine technique; crop fluctuations; wars, tariffs, and other "irregular" factors; the distribution of wealth; the problem of "purchasing power"; private profit and "competition"; effect of monopoly. Progress and stability; programs of taxation and public works as proposed remedies; possibilities under socialism. Prerequisite: Econ. 141 or B.A. 142, or consent of instructor.

Second Semester			
W	6:20	Campus Vincent 211, Marget	

Econ. 166 International Economic Problems. 3 credits. \$10.

The economic situation before and following World War I; reparations and war debts; unstable factors in the 1920's in relation to the depression beginning in 1929; the economics of conquest (raw materials, population, colonies); the export of capital; selected problems in international economic policy. Prerequisite: Econ. 6-7.

First Semester			
W	6:20	Campus Vincent 211, Marget	

Econ. 175 Government Regulation of Business. 3 credits. \$10.

A general course on the economic aspects of legislation affecting the pricing process and the distribution of the national income. Topics studied include economic origins of modern business limitations on free competition; regulation of public utilities, trusts and combinations, and "unfair competitive practices"; positive assistance to industrial groups. Prerequisite: 20 credits in social science including Econ. 6-7 or 83.

First Semester			
T	6:20	Campus Vincent 221, Schmidt	

Introduction to Economic History. See page 16.

† Classes marked with a dagger (†) are continuation classes and require the completion of two or three semesters, as indicated, before any credit is given.

FINANCE

Econ. 3 Elements of Money and Banking. 3 credits. \$10.

The nature and functions of money and credit; a study of commercial banking and the Federal Reserve System—their functions in private finance, ordinary governmental finance, and war finance. Machinery designed to control alternate periods of inflation and deflation; other types of financial institutions and security exchanges; changes in form and functions resulting from legislation or revised business practices. No prerequisite.

First Semester

M 6:20 Campus Vincent 115, Stehman
T 6:20 St. P. Ext. Center 218, Kozelka

B.A. 58 Elements of Public Finance. 3 credits. \$10.

Public expenditures, revenues, debts, budgets; special attention to tax principles, practices, and burdens. Adapted to citizens generally, but of special interest to public officials. Required of all candidates for degree in business. Prerequisite: Econ. 6.

Second Semester

Th 8:05 Campus Vincent 115, Borak

B.A. 142 Advanced Money and Banking. 3 credits. \$10.

The problems of a central bank and the theory of the value of money. Includes control of reserves, providing a scientific currency, regulation of credit, fluctuations of the general price level—their causes and possible reduction. Prerequisite: Econ. 3, 6-7.

Second Semester

T 6:20 Campus Vincent 221, Tow

B.A. 155 Corporation Finance. 3 credits. \$10.

Concerned with financing all forms of business organization; raising capital from private and governmental agencies; holding companies, mergers, trusteeships, and reorganizations; relation of the corporation to creditors, minority stockholders, and the public; current legislation and changed practices of the past decade; special problems under war conditions. Prerequisite: Econ. 3, 6-7.

Second Semester

M 6:20 Campus Vincent 115, Stehman

INSURANCE

3ex General Insurance. 3 credits for certificate. \$10.

A basic course in the principles and practices involved in underwriting the various forms of insurance coverage, property and casualty in particular. Prerequisite to all other insurance classes. No prerequisite.

First Semester

T 6:20 Campus Vincent 2, Ware

B.A. 60 Fire and Marine Insurance. 3 credits. \$10.

Historic background of fire and marine insurance; insurance carriers; standard policy; state regulation and supervision; agency viewpoint of rate making; inland marine forms and coverages. Prerequisite: 3ex, Econ. 6-7.

First Semester

M 6:20 Campus Vincent 2, Law

B.A. 61 Casualty Insurance. 3 credits. \$10.

The risks of insurance coverages, policy provisions, and methods of rating in the more important lines of casualty insurance—accident and health, employer's liability, workmen's compensation, automobile, robbery and theft, plate glass, and miscellaneous damage types. Prerequisite: 3 ex, Econ. 6-7.

Second Semester

M 6:20 Campus Vincent 6, McGee

LABOR AND PERSONNEL RELATIONS

Econ. 161 Labor Problems and Trade Unionism. 3 credits. \$10.

Employment; hours; wages; extent and stronghold of unions; open and closed shop; collective bargaining; industrial unrest; government regulation of labor disputes. Special emphasis on the current proposals for industrial recovery and the re-employment of labor. Prerequisite: Econ. 6-7.

First Semester

M 8:05 Campus Vincent 205, Yoder

B.A. 167 Personnel Administration. 3 credits. \$10.

Evaluation of managerial policies and devices for the control of personnel; determination of labor needs; methods of dealing with workers; selective devices; training and safety programs; compensation; collective bargaining; governmental personnel programs. Prerequisite: Econ. 161.

Second Semester

M 8:05 Campus Vincent 205, Yoder

Psychology of Personnel Work in Industry. See page 23.

MARKETING AND MERCHANDISING**Salesmanship. 3 credits for certificate. \$10.**

Principles underlying salesmanship—buying motives; pre-approach, approach, the interview, meeting objections, closing the sale; demonstration sales. No prerequisite.

First Semester

M 8:05 Campus Vincent 115, Faragher

Purchasing and Storeskeeping. 3 credits for certificate. \$10.

Significance and organization of the purchasing and stores departments; purchasing and stores policies and procedures; standards and specifications; sources and assurance of supply; current government regulations on purchasing; purchasing budgets; purchase and stores records and control. Prerequisite: see instructor.

First Semester

W 6:20 Campus Vincent 115, Chute

Retailing Home Merchandise. No credit. \$6.

With the demand for consumers' goods exceeding supply, purchasing power will be directed into fields where shortages are less acute. One such field is home furnishing and decorating. Dealers in these lines must be able not only to supply merchandise but to offer advice on its selection and use. This course will feature talks by experts on such aspects of home decoration as: furniture styles and their combination, cabinet woods, floor coverings, wallpaper, glassware and china, color and lighting. Ten meetings. No prerequisite.

First Semester

T 6:20 Campus Jones 102, Lewis

Selling by Mail. No credit. \$10.

An intensive course in the expert techniques of doing business by mail, covering such subjects as: the basic essentials of effective mail order copy; the five checking points for an offer made by mail; how experts develop their successful appeals; the principal factors in replacing salesmen with mail selling; 4 ways to "pre-test" a product for mail order selling possibilities; why the "hook" in a mail order offer doubles average returns; how to avoid the common causes of mail order failures. Instruction based upon current mail order campaigns; student's individual problems analyzed. No prerequisite.

First Semester

M 6:20 Campus Vincent 112, Brownson

Textiles. 3 credits. \$10 plus 50 cents materials fee.

An introductory course concerning the manufacture, qualities, finishes, and testing of fabrics in the stores today—in ready-to-wear for men and women and in home furnishings. Planned for consumers, store people, and manufacturers. Includes new fibers and study of current advertising and comparative values. No prerequisite.

First Semester

M 6:20 Campus Chemistry 115, Engstrom

Retail Credits and Collections I-II. 3 credits each semester for certificate. \$10.

The nature and types of credit and of credit instruments with special emphasis on retail credit; sources of credit information; qualifications and work of the credit manager; rating agency and retail credit bureau; collection follow-up; credit limits and control. Second semester devoted to organization and operation of retail collection departments; collection policies and methods; planning collection letters; installment collections; locating "skips"; use of attorneys and collection agencies. Conducted jointly by the instructors and several experienced retail credit men of the Twin Cities. No prerequisite.

First Semester**Second Semester**

I T 6:30 Mpls. N. W. Bank Bldg. 664,
Chute and others

II T 6:30 Mpls. N. W. Bank Bldg. 664,
Thrush and others

Wholesale Credit and Collection Curriculum. In co-operation with the National Institute of Credit.

The University of Minnesota co-operates with the Minneapolis and St. Paul chapters of the National Institute of Credit in a program of educational training leading toward the awards of associate and fellow of the National Institute of Credit. The National Institute of Credit is the educational branch of the National Association of Credit Men. Course registrations may be made through the association offices, 420 Rand Tower, Minneapolis, and 801 Guardian Building, St. Paul. Registration in the National Institute of Credit is required for credit toward awards of associate and fellow. Transfer credit may be applied for courses completed previously in recognized colleges, up to 50 per cent of the requirements listed below.

The following program has been approved as fulfilling the requirements for awards of associate and fellow of the National Institute of Credit:

Classes in Association Curriculum

Associate Award

Economics	Econ. 6-7 Principles of Economics
Fundamentals of Accounting	Econ. 20L-25L Principles of Accounting
Business English	2ex Business Correspondence
Credits and Collections	To be announced

Fellow Award (in addition to courses above)

Business Law	B.A. 51-53
Marketing	B.A. 77 Survey in Marketing
Public Speaking	Beginning Practical Speech Making
Problems of Credit Management	To be announced

Equivalent Extension Classes

STATISTICS

Econ. 5 Elements of Statistics. 3 credits. \$10.

The principles of statistical methods applied to business; collection, tabulation, and interpretation of statistical data; averages, ratios, errors, index numbers, graphs, and charts. No prerequisite.

First Semester

T 8:05	St. P. Ext. Center 218, Kozelka
W 6:20	Campus Vincent 105, Graves

B.A. 112 Business Statistics. 3 credits. \$10.

The technique of time series analysis; methods of determining normal or trend values; methods of measuring seasonal variation and adjustment of data for seasonal fluctuation; measurement of degree of relation between time series, graphically and by correlation technique; analysis and comparison of index numbers of local and national business conditions. Prerequisite: Econ. 5, or 14, or equivalent.

Second Semester

W 8:05	Campus Vincent 115, Kozelka
--------	-----------------------------

TRAFFIC AND TRANSPORTATION

B.A. 71-72 Transportation: Services and Charges. 3 credits each semester. \$10.

The rail, water, air, and highway transportation facilities, services, rates, and laws, and their relation to business establishments; problems in handling freight, express, and parcel-post shipments; scope, selection, and use of the facilities and services of common carriers; rate structures; problems involving freight classification and use of tariffs. 71 to precede 72. Prerequisite: Econ. 6-7.

First Semester

71 M 6:20	St. P. Ext. Center 217, Nightingale
Th 6:20	Campus Vincent 1, Nightingale

Second Semester

72 Th 6:20	Campus Vincent 1, Nightingale
------------	----------------------------------

B.A. 180 Senior Topics: Transportation. 3 credits. \$10.

Advanced study of tariffs and tariff construction, of rate structures, and of auxiliary services, including problems thereon. Analysis of important current cases and decisions affecting shippers and carriers. Prerequisite: 71-72.

Second Semester

M 6:20	Campus Vincent 2, Nightingale
--------	-------------------------------

Advanced Traffic and Transportation I and II. 3 credits each semester for certificate. \$10.

Advanced consideration of regulatory state and federal laws governing rail and highway transportation. Detailed study of highway rates and problems. Attention to practice and procedure before rate and classification committees, state commissions, and the Interstate Commerce Commission. Preparation of informal, formal, and investigation and suspension cases before regulatory commissions. Prerequisite: B.A. 71-72 or equivalent.

First Semester

I Th 6:20	Campus Vincent 2, Mann
-----------	------------------------

Second Semester

II Th 6:20	Campus Vincent 2, Mann
------------	------------------------

ENGINEERING CLASSES

For advice on programs of study leading to extension certificates in engineering and to degrees in the Institute of Technology, consult the Students' Work Committee, Room 409, Administration Building.

AERONAUTICAL ENGINEERING

Aircraft Engines 1-2. 3 credits each semester for certificate. \$10.

Types of engines and their development; calculation of size and horse power; use of dynamometers and torque stands; aviation gasoline, specifications and tests, octane numbers; principles of ignition, magnetos, starters, carburetors, combustion; modern operation systems, performance; oils and oil testing; the aviation Diesel. Lectures and laboratory tests. No prerequisite.

First Semester

1 W 7:30 Campus Oak St. Lab.,
Robertson

Second Semester

2 W 7:30 Campus Oak St. Lab.,
Robertson

Aeronautics I: Airplane Construction. 3 credits for certificate. \$10.

Nomenclature; theory of lift and drag; wind tunnel; airfoil characteristics; airplane performance; stability and control; types of airplanes; demonstration and inspection of airplane and its parts; materials and their properties; principles in propeller theory. Prerequisite: elementary mathematics.

First Semester

I T 7:30 Campus Armory 105, Akerman

Aeronautics II: Elementary Navigation and Meteorology. 3 credits for certificate. \$10.

Navigation instruments; principles of celestial navigation; laying out and checking course; dead reckoning; radio use; magnetic compass and its use; maps and charts; the atmosphere and clouds; reading of weather maps. Prerequisite: elementary mathematics.

Second Semester

II T 7:30 Campus Armory 105, Akerman

Aeronautical Drafting. See page 40.

DRAWING AND DESCRIPTIVE GEOMETRY

1-2 Engineering Drawing. 3 credits each semester. \$10.

Elements of drafting, representation, geometry, sketching, lettering, working drawings, conventions, tracing. Auxiliary views, multiple projection, detail and assembly drawings. Students may register for either class either semester. No prerequisite.

First Semester

W 7:30 Campus Main Eng. 201, Myers

W 7:30 St. P. Mechanic Arts High 101,
Dow

Th 7:30 Campus Main Eng. 101, French

Second Semester

W 7:30 Campus Main Eng. 201, Myers

W 7:30 St. P. Mechanic Arts High 101,
Dow

Th 7:30 Campus Main Eng. 101, French

N.B.—Three credits given only for completion of entire work of a semester; 1½ credits may be given for satisfactory completion of a half of a semester's work, with another registration necessary for the completion of the remainder.

3 Descriptive Geometry. 3 credits. \$10.

Elementary course in the methods of representation, correlated in part with analytical geometry. Graphical and algebraic solutions. Lectures, demonstrations, and drafting. Prerequisite: Draw. 2, M.&M. 11.

First Semester

W 7:00 Campus Main Eng. 101, Cruzen

20 Advanced Mechanical Drawing. No credit. \$7.

Working drawings, gearing, cams, developments, multiple auxiliary views, special projections. St. Paul class repeated second semester. Prerequisite: Draw. 1.

First Semester

W 7:30 Campus Main Eng. 101, Cruzen

W 7:30 St. P. Mechanic Arts High 101,
Dow

Second Semester

W 7:30 St. P. Mechanic Arts High 101,
Dow

22 Structural Drafting. 2 credits. \$7.

Details of fabrication of beams, girders, columns, trusses, etc.; material bills. Repeated second semester. Prerequisite: Draw. 1.

First Semester

Th 7:30 Campus Main Eng. 101, French

Second Semester

Th 7:30 Campus Main Eng. 101, French

29 Aeronautical Drafting. 2 credits. \$7.

Detail, assembly, and layout drawings. Standard practices in the aircraft industry. Army-Navy standards and specifications; tolerances and allowances; graphical integration. Prerequisite: Draw. 2 or consent of instructor.

First Semester

W 6:20 Campus Main Eng. 101, Cruzen

38 Blue Print Reading. No credit. \$10 plus \$1 materials fee.

Orthographic projection, pictorial drawings, and technical sketching. Calculations of areas, volumes, and weights; tabulations of quantities from working drawings. No prerequisite.

First Semester

M 7:30 Campus Main Eng. 101, Potter

52 Alignment Charts. 3 credits. \$10.

Theory and construction of alignment charts for the solution of engineering formulae having three or more variables. Prerequisite: engineering drawing and trigonometry.

First Semester

T 7:30 Campus Main Eng. 107, Levens

Other Drawing classes. See page 5.

ELECTRICAL ENGINEERING**Fundamentals of Electrical Engineering: Direct Current. 5 credits each semester for certificate. \$17.**

Study of the fundamentals of electricity and magnetism; direct current and alternating current circuits; operating characteristics and industrial applications of direct current and alternating current machinery. Lectures, demonstrations, and laboratory. No prerequisite.

First SemesterTTh 7:30 Campus Elec. Eng. 237,
Johnson, Caverley**Second Semester**TTh 7:30 Campus Elec. Eng. 237,
Johnson, Caverley**11-13-15 Elements of Electrical Engineering. 4½ credits each semester. \$15.**

Introduction to the development, principles, materials, safety, and general applications of electrical engineering. Begins the regular electrical engineering sequence (sophomore year) of the Institute of Technology. Prerequisite: completion of, or concurrent registration in, integral calculus.

First SemesterMW 7:30 Campus Elec. Eng. 237,
Johnson, Caverley**Second Semester**MW 7:30 Campus Elec. Eng. 237,
Johnson, Caverley**GENERAL ENGINEERING****G.E. 70 Use of the Engineer's Slide Rule. 1 credit for certificate. \$5.**

Theory and computation practice necessary for those who wish to use the slide rule in ordinary office computations. Meets one hour weekly. No prerequisite.

First Semester

T 7:00 Campus Main Eng. 205, Boon

G.E. 81 Building Cost Estimating. 3 credits for certificate. \$10.

Blueprint reading, quantity survey, mensuration; estimates of concrete, brick, timber, and steel structures. No prerequisite.

First Semester

T 8:05 Campus Main Eng. 217, Boon

MATHEMATICS AND MECHANICS

N.B.—The numbers of these courses are those used by the Institute of Technology.

Shop Mathematics. 3 credits for certificate. \$10.

Practical course for shop men in defense or other machine work embracing arithmetic from fractions through decimals, percentage, proportion; problems in areas, volumes, weights of materials; screw threads, gears, metric system, logarithms, elementary algebra, geometry, and trigonometry from a shop man's point of view. Valuable also to the teacher of applied mathematics under the Smith-Hughes or defense education acts. No prerequisite.

First Semester

M 6:20 Campus Main Eng. 104, Fischer

Elementary Algebra. Credit toward entrance. \$10.

Elements of algebra to quadratic equations. Both semesters necessary. No prerequisite.

First Semester

M 8:05 Campus Main Eng. 106

Second Semester

M 8:05 Campus Main Eng. 106

Solid Geometry. Credit toward entrance. \$10.

Standard theorems and exercises; practice in special proofs and original exercises. Class will finish December 14; extra sessions arranged to make semester's work complete. Prerequisite: plane geometry.

First Semester

M 6:20 Campus Main Eng. 136, Schuck

9 Higher Algebra. 5 credits. \$17.

A review and collegiate treatment of the topics of elementary algebra, which is prerequisite. Not open for credit to those who present higher algebra for entrance to college or for candidates for degree in Institute of Technology. Repeated second semester. Prerequisite: elementary algebra.

First Semester

M 7:00 Campus Main Eng. 107, Peebles

Second Semester

M 7:00 Campus Main Eng. 205

11 College Algebra. 5 credits. \$17.

Quadratic equations; equations in the quadratic form; simultaneous quadratic equations; graphical representation; progressions; mathematical induction; binomial theorem; permutations; combinations; probability; determinants; theory of equations. Repeated second semester. Prerequisite: higher algebra.

First Semester

W 7:00 Campus Main Eng. 107, Teeter

Second Semester

M 7:00 Campus Main Eng. 104, Fischer

12 Trigonometry. 5 credits. \$17.

Logarithms and plane trigonometry. Repeated second semester. Prerequisite: higher algebra.

First Semester

Th 7:00 Campus Main Eng. 106, Fischer
Th 7:00 St. P. Ext. Center 219, Dow

Second Semester

M 7:00 Campus Main Eng. 207, Teeter

13 Analytical Geometry, Plane and Solid. 5 credits. \$17.

Elements of plane analytical geometry including conic sections; brief introduction to solid analytical geometry. Prerequisite: trigonometry.

Second Semester.

Th 7:00 Campus Main Eng. 106, Fischer
Th 7:00 St. P. Ext. Center 219, Dow

24 Differential Calculus. 5 credits. \$17.

Limit; derivative; simple applications of derivative; maxima and minima; differentials; rates; change of variable; radius of curvature; mean value; indeterminate forms; partial differentiation; series. Prerequisite: analytical geometry.

First Semester

T 7:00 Campus Main Eng. 106, Fischer

25 Integral Calculus. 5 credits. \$17.

Expansion of function; Taylor's theorem; standard elementary forms; definite integral; rational fractions; integration by substitution, by parts; reduction formulas; integration of processes of summation; double and triple integration; elementary ordinary differential equations. Prerequisite: differential calculus.

Second Semester

T 7:00 Campus Main Eng. 106, Fischer

M.&M. 26 Technical Mechanics—Statics. 5 credits. \$17.

This class deals with the following aspects of statics: characteristics of a force, parallelogram law, moments, resultants, equilibrium, friction, graphical methods, work, and theory of the moment of inertia. Prerequisite: integral calculus.

First Semester

Th 7:00 Campus Main Eng. 107, Teeter

M.&M. 127 Technical Mechanics—Dynamics. 5 credits. \$17.

This class deals with the following aspects of dynamics: mass, acceleration, governors, power, momentum, and the theorem of Coriolis. Prerequisite: statics.

Second Semester

Th 7:00 Campus Main Eng. 107, Teeter

M.&M. 151 Differential Equations for Engineers. 3 credits. \$10.

A study of the standard types of differential equations and solutions, with particular reference to the linear equations of importance in engineering. Symbolic and operational methods are introduced. Prerequisite: integral calculus.

First Semester

M 8:05 Campus Main Eng. 104, Fischer

MECHANICAL ENGINEERING**Plastic Molding.** 3 credits for certificate. \$10 plus \$2 materials fee.

A laboratory and lecture course dealing with the materials, equipment, and methods used in the fabrication of plastic products. No prerequisite.

Second Semester

T 6:20 Campus Mech. Eng. 120, Holtby

M.E. 9ex Foundry Practice and Control Methods. 3 credits for certificate. \$10 plus \$2 materials fee.

A laboratory and lecture course dealing with theory and practice in making cores and molds, alloying and casting ferrous and nonferrous metals. The control of materials and processes used in commercial foundry practice. No prerequisite.

First Semester

T 6:20 Campus Mech. Eng. 153, Holtby

M.E. 10ex Industrial X-Ray. 3 credits for certificate. \$10 plus \$2 materials fee.

A laboratory course dealing with casting and weld defects. X-ray and gamma-ray inspection of fabricated parts, interpretation of radiographs. No prerequisite.

First Semester

W 6:20 Campus Mech. Eng. 120, Holtby

M.E. 27 Machine Design. 3 credits. \$10.

Fundamental principles of design of machine elements; lubrication, theory and application; friction drives, shafts, gears, belts, connectors, springs, flywheels, machine frames, shrink fits. Prerequisite: M.&M. 85 or 128.

First Semester

W 7:30 Campus Main Eng. 106, Herrick

M.E. 55 Internal Combustion Engines. 3 credits. \$10.

This is a lecture and laboratory course, covering real gas cycles, combustion, fuels and lubrication; construction and performance of gasoline, Diesel, and compression-ignition engines. It is the third and concluding part of the sequence, M.E. 40-41-55, which was begun last year. Prerequisite: M.E. 41.

First Semester

Th 7:30 Campus Oak St. Lab., Robertson

M.E. 171 Production Control. 3 credits for certificate. \$10.

Detailed study of basic principles underlying economical production of manufactured goods; production planning and control; standardization; stores and stock control; purchasing; cost finding; inspection systems. Prerequisite: shop experience.

First Semester

T 6:20 Campus Mech. Eng. 202, Laitala

M.E. 174 Motion and Time Study. 3 credits for certificate. \$10.

Motion and time study as a tool in industrial management. Particular emphasis on cost reduction due to better methods; process and operation analysis; micromotion studies; lectures, laboratory studies, and problems. No prerequisite.

Second Semester

T 6:20 Campus Mech. Eng. 202, Laitala

METALLOGRAPHY**1-2ex Metallography and Heat Treatment of Iron and Steel.** 3 credits each semester for certificate. \$10.

A beginning course for those engaged in practical heat treatment, in writing specifications, and in purchasing or selling iron or steel. Lectures, demonstrations, and laboratory work in pyrometry, thermal analysis, preparation of alloys, microscopic examination of metal alloys, preparation of photomicrographs. The theory of heat treating, and its relation to practice; welding. No prerequisite but 1 must precede 2 unless the student has had experience in heat treatment.

First Semester**Second Semester**

1ex M 7:30 Campus Appleby Hall 306,
Forsyth

2ex M 7:30 Campus Appleby Hall 306,
Forsyth

PETROLEUM PRODUCTS**Petroleum Products and Testing.** 3 credits each semester for certificate. \$10.

A practical class in refining and testing of petroleum products—gasoline, kerosene, gasoline oils, lubricating oils, road oils, etc. Lectures will cover the chemistry of petroleum, the unit process, such as acid treatment, solvent refining, and cracking; the characteristics and properties of the products, with laboratory tests; the significance of the test results. Both semesters necessary for complete results. No prerequisite.

First Semester**Second Semester**

Th 7:30 Campus Exp. Eng. 215, Peterson

Th 7:30 Campus Exp. Eng. 215, Peterson

DAY-BY-DAY SCHEDULE OF CLASSES, FIRST SEMESTER, 1942-43

MONDAY	TUESDAY	WEDNESDAY	THURSDAY
Classes in Minneapolis	Classes in Minneapolis	Classes in Minneapolis	Classes in Minneapolis
<p>6:00 p.m. Badminton Club</p> <p>6:20 p.m. Botany 1 Educational Psychology 138 Freshman Composition 4-5 Short Story 69 Bible as Literature 40 Book Reviews French 3 French 20 German 1 German 3 German 17 German 50 First Aid for Nurses 56 European Civilization 1 Clothing & Home Furnishings Interior Decorating I Cameracraft, Advanced Physics 7 American Government 1 Psychology 1 Psychology of War Norwegian 1 How to Listen to the Radio Rural Sociology 14 Marriage Problems 119 Social Work 127 Spanish 1 Vocabulary Building I Zoology 1 Principles of Accounting 20L Auditing Psychology of Advertising 56 Elementary Advertising 88 Business English Money and Banking 3 Fire and Marine Insurance Selling by Mail Textiles Shop Mathematics Solid Geometry</p>	<p>4:40 p.m. Child Training 40</p> <p>6:00 p.m. Tennis for Teachers (Women)</p> <p>6:20 p.m. Freshman Composition 5 Essay Writing 81-82 Contemporary Literature 38 Shakespeare Geography of Asia Geology 1 Economic Geology 3 Public & Personal Health Preventive Medicine 53 American History 20-21 Harmony 4 Political Science 40 Documents of Freedom Personnel Psychology 160 Swedish Literature 53 Sociology 1 Social Work 89a Speech Hygiene I Man in Nature Acting 32 Principles of Accounting 20L Accounting 150C Cost Accounting 152 Business Law 51 Latin American Economics 126 Government and Business 175 General Insurance Retailing Home Merchandise Retail Credits & Collections Foundry Practice M.E. 9ex Production Control M.E. 171</p> <p>6:30 p.m. Beginning Golf (Women)</p> <p>6:35 p.m. Principles of Accounting (AIB)</p>	<p>5:00 p.m. (N. W. Bank) Spanish 1</p> <p>6:20 p.m. Astronomy 11 H.Ed. 180 Freshman Composition 6 Advanced Writing 27 Literature 22 American Literature 45 How To Read French 1 French 5 French Conversation 65 Public Health Nursing 170 American History 22 Europe in 20th Century 65 Economic History 80-81 Propaganda and Censorship Bach, Beethoven, etc. Cameracraft, Beginning Physics 7 World Politics 25 Radio Speech 65 Norwegian Conversation 5 Scandinavian 21 Social Pathology 49 Beginning Practical Speech Advanced Practical Speech Zoology 1 Accounting 26 Governmental Accounting 158 Business Law 51 International Economics 166 Purchasing Statistics 5 Aeronautical Drafting Industrial X-Ray M.E. 10ex</p> <p>7:00 p.m. Geography of the War Music Today American Country Dancing</p>	<p>6:20 p.m. Handcrafts Painting, etc. G.C. 22A Drawing and Painting Contemporary Literature 39 Mineralogy 23 Rock Study 25 Human Body in Operation Mental Hygiene Latin-American History Far East Today Budgeting History of Music Pre-Concert Talks Nursing Education 61 Logic Physics in Modern Life Portuguese 1 Laboratory Psychology 4 Radio Script Writing I Russian 1 The Speaking Voice Principles of Accounting 20L Income Tax Survey Business Organization 89 Building Maintenance Advanced Economics 103 Transportation 71 Advanced Transportation</p> <p>7:00 p.m. Trigonometry Technical Mechanics</p> <p>7:30 p.m. Bacteriology 53 Inorganic Chemistry 9ex Quantitative Analysis 1ex Quantitative Analysis 123-124 Structural Drafting Electrical Engineering Internal Combustion Engines Petroleum Products</p>

6:30 p.m.

Swimming (Women)
Rhythmic Exercises (Women)
Recreational Games (Women)

7:00 p.m.

Higher Algebra

7:30 p.m.

Anatomy 5
Commercial Drawing I
Immunity 116
Blueprint Reading
Electrical Engineering
Metallography
Badminton Club

8:05 p.m.

Seminar in Writing 91
Abnormal Psychology 144
Speech 1, 2, and 3
Hotel Management
Labor Problems 161
Salesmanship
Elementary Algebra
Differential Equations

Classes in St. Paul**6:20 p.m.**

American History 20
Human Behavior Mechanisms 64
Spanish 3
Principles of Accounting 20L
Accounting 150A
Income Tax Accounting 134
Business Law 51
Principles of Economics 6
Transportation 71

8:05 p.m.

Child Welfare 90
Europe in 20th Century 65
Ward Administration 60
Business Law 54

7:00 p.m.

Physical Development (Men)
Elimination of Foreign Accent
Slide Rule
Differential Calculus

7:30 pm

Freehand Drawing 1
Bacteriology 53
Inorganic Chemistry 9ex
Quantitative Analysis 1ex
Quantitative Analysis 123-124
Symphony Orchestra (Sec. 2)
Airplane Construction
Alignment Charts
Electrical Engineering

8:05 p.m.

Child Psychology 80
English Review
The Great Books
Geology Laboratory A
Interior Decorating I
Swimming (Men)
Swedish 7
Accounting, 150A
Income Tax Accounting 134
Business Law 53
Building Cost Estimating

Classes in St. Paul**6:20 p.m.**

Ed.C.I. 173
Book Reviews
Psychology 1
Spanish 1
Speech 1, 2, and 3
Standard Costs B.A. 133
Money and Banking 3

6:30 p.m.

Recreational Gymnastics (U. Farm)

7:30 p.m.

Swimming (U. Farm)

8:05 p.m.

Livestock Production (U. Farm)
Nursing Ed. 70
Statistics 5

Descriptive Geometry 3
Mechanical Drawing 20
College Algebra

7:30 p.m.

Anatomy 5
Drawing and Painting
Immunity 116
Indoor Gardening 10
Ward Administration 60
Engineering Drawing 1-2
Electrical Engineering
Machine Design

8:05 p.m.

Preparatory Composition
Freshman Composition 4-5
History 57
Introduction to Reporting 13
Symphony Orchestra (Sec. 2)
Stamp Collecting
Problems of Philosophy 1
Philosophy of History 170
Psychology 1
Personality Psv. 119
Radio Drama 66

Classes in St. Paul**6:20 p.m.**

Art Metal Work (U. Farm)
Freshman Composition 4-5
Interior Decorating I
Problems of Philosophy 1
Vocabulary Building I
Accounting 150A
Constructive Accounting

7:30 p.m.

Architectural Drafting
Engineering Drawing 1-2
Mechanical Drawing 20

8:05 p.m.

Accounting 150C
Cost Accounting 152
Auditing

8:05 p.m.

Anthropology 42
Film and Drama Today
Economics 6

Classes in St. Paul**6:20 p.m.**

Ed.Psy 60
Preparatory Composition
Commercial Geography 41
Sociology 1
Business English

6:30 p.m.

Swimming (U. Farm)

7:00 p.m.

Trigonometry

FRIDAY**Classes in Minneapolis****6:00 p.m.**

Badminton Club

6:20 p.m.

Piano Playing
Psychology 1

6:35 p.m.

Principles of Accounting (AIB)

7:30 p.m.

Badminton Club

Classes in St. Paul**10:00 a.m.**

Gymnastics and Plunge (Women)

6:20 p.m.

Principles of Accounting 20L

INDEX TO CLASSES

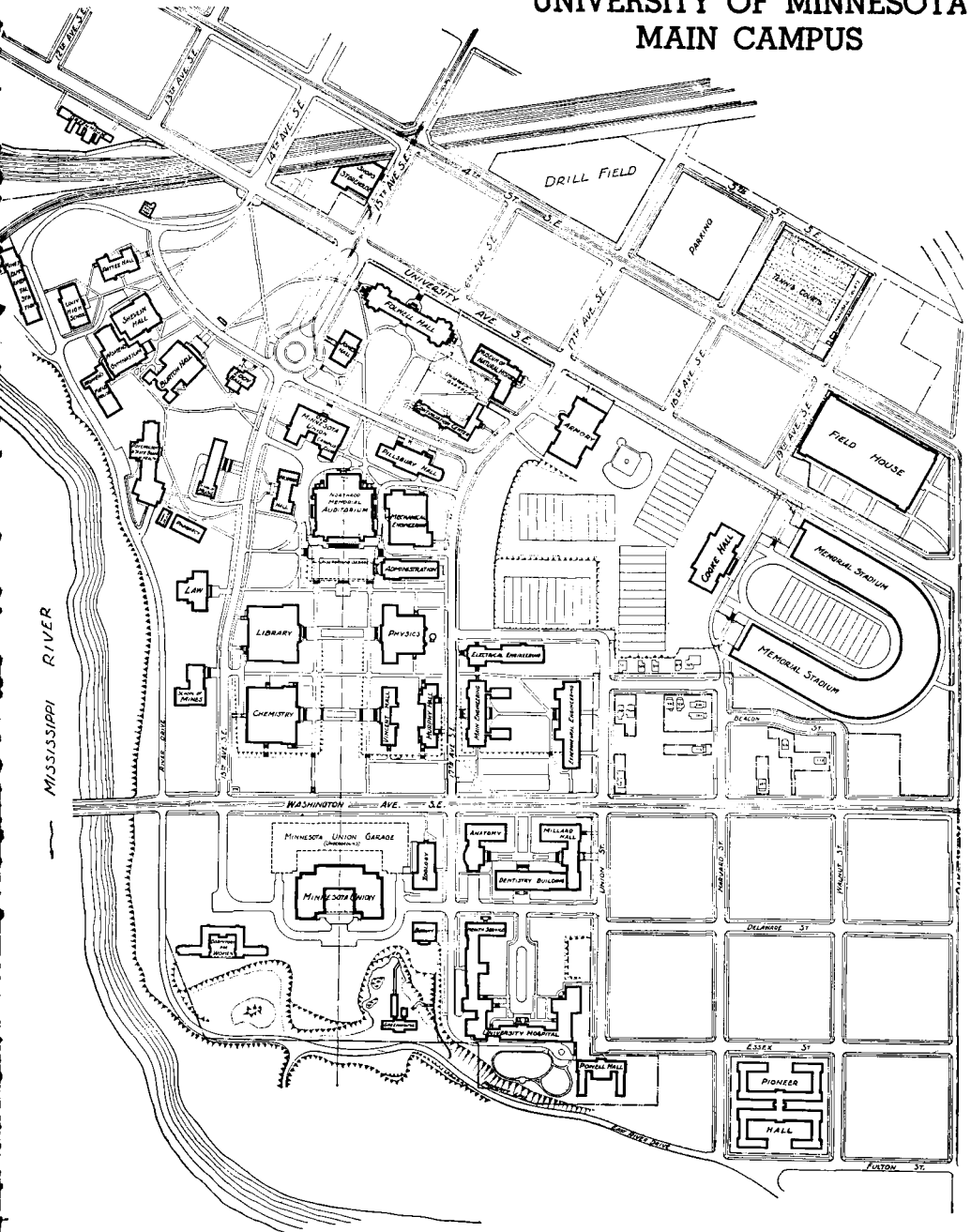
	Page		Page
Accounting	31	Far East	13, 16, 21
Acting	30	Film and Drama	29
Advertising	33	Finance	36
Aeronautical Engineering	39	First Aid	15
Agriculture	5, 26, 27	Fish and Fishing	12
Algebra	41	Foreign Accent Elimination	29
Anatomy	5	Foundry work	42
Animal Husbandry	5	French	12
Anthropology	5	Freshman Composition	10
Architecture	5, 6		
Art	5	Gardening	12
Art Education	5, 17	Geography	13
Art Metal Work	6	Geology	13
Astronomy	6	Geometry	39, 41
Auditing	32	German	14
		Golf	24, 25
Bacteriology	7	Government	21
Badminton	25		
Banking	36	Handcrafts	6
Birds of Minnesota	19	Heat treatment of metal	43
Blueprint Reading	40	Home Interests	8, 16
Book Reviews	11	Home Management	34
Botany	7	How To Read	12
Budgeting	16	How To Study Institute	Back cover
Building Maintenance	34		
Business Administration	34	Industrial Engineering	42
Business classes	31	Insurance	36
Business English	34	Interior Decorating	17
Business Law	34		
		Journalism	17
Calculus	41		
Cameracraft	20	Labor problems	36
Chemistry	8	Languages	
Child Welfare	8	English	10
Clothing	16	French	12
Composition, English	10	German	14
Consumer Information	16	Norwegian	26
Cost Estimating	40	Portuguese	22
Credits and Collections		Russian	25
Retail	37	Spanish	28
Wholesale	38	Swedish	26
Dancing, Folk	25	Latin America	13, 16, 28, 35
Documents of Freedom	22	Literature, English	11
Drawing	5, 39, 42	Logic	20
Economics	35	Machine Design	42
Education	8, 9, 15	Man in Nature and Society	29
Electrical Engineering	40	Marketing	37
Engineering classes	39	Marriage Problems	27
Engines	39, 42	Mathematics	41
English classes	10	Mechanical Engineering	42
Business	34	Mechanics	42
Composition	10	Medicine	14
Literature	11	Mental Hygiene	15
Placement tests	10	Merchandising	37
Writing	10	Metallography	43
Ethics	20		

INDEX TO CLASSES

47

	Page		Page
Mineralogy	13	Recreation	24
Minneapolis Symphony Orchestra	4, 18	Religion	11, 20
Minnesota Plant Life	7	Retail Merchandising	37
Music	4, 18	Romance Languages	
Natural History	7, 12, 19	French	12
Navigation	6, 39	Portuguese	22
Norwegian	26	Spanish	28
Nursing Education	15, 19	Russian	25
Nutrition	15	Salesmanship	37
Orientation (Science survey)	29	Scandinavian	26
Painting	5, 6	Science survey	29
Personal Health	14	Shop Mathematics	41
Personnel work	19, 23, 37	Slide Rule	40
Petroleum Products	43	Social Work	27
Philately	20	Sociology	26
Philosophy	20	Spanish	28
Photography	20	Speech	28
Physical Education	24	Stage	29
Physics	21	Stamp Collecting	20
Plastic Molding	42	Statistics	9, 38
Political Science	21	Swedish	26
Portuguese	22	Swimming	24, 25
Preparatory Composition	10	Technical Mechanics	42
Preventive Medicine	14	Technology classes	39
Production management	34, 43	Tennis	24
Propaganda	17	Textiles	37
Psychology	22	Theater	29
Advertising	33	Traffic and Transportation	38
Child	8	Trigonometry	41
Educational	9	Vocabulary Building	29
Public Health	14	War	9, 13, 17, 21, 23, 35
Public Speaking	28	Welding	42, 43
Publicity	17	World Politics	21
Purchasing	37	Writing	10, 17, 23
Radio	23	X-Ray	42
Drama	23	Zoology	30
Script Writing	23		
Speech	23		

UNIVERSITY OF MINNESOTA MAIN CAMPUS



HOW TO STUDY INSTITUTE

The General Extension Division takes pleasure in inviting registered students, and those who are about to register, to attend, without charge, an institute on how to study expertly. Charles Bird, professor of psychology, will be in charge of the institute. Meetings will be an hour and forty minutes in length, the first half for lectures by the instructor and the second for questions and discussion designed to clear up difficulties. The lectures will cover the following topics:

1. **ADULT LEARNING.** A brief survey of the relation between age and learning. The importance of proper motivation and effective incentives.

2. **BASIC FORMS OF SKILL.** Importance of reading and vocabulary. Problems of concentration. Need for equating ambitions and abilities. Suggestions for fostering these forms of skill.

3. **TEXTBOOK ASSIGNMENTS.** Self-recitation methods applied to various types of courses. Useful and useless outlines.

4. **NOTES AND EXAMINATIONS.** Taking lecture notes and preparing for various types of examinations.

5. **DISTRIBUTION OF STUDY.** Importance of avoiding fatigue. Cramming as a useful, supplementary aid versus cramming as a substitute for spaced learning. Practical applications of mental hygiene for the extension student.

Dates:	September 21-25
Evenings:	Monday to Friday
Hour:	7:00 to 8:40 p.m.
Place:	Auditorium of Museum of Natural History, Campus

The Bulletin of the
UNIVERSITY of MINNESOTA

Instructions for Registration of
Advanced Standing Students

Fall Quarter, 1942



Volume XLV, Number 40

June 22, 1942

*Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota.
Accepted for mailing at special rate of postage provided for in Section 1103, Act of
October 3, 1917, authorized July 12, 1918*

REGISTRATION INSTRUCTIONS

ADVANCED STANDING STUDENTS FALL QUARTER, 1942

COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS, September 21-25:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for medical examination.
2. Report to the University Armory, 17th and University Avenues. Present admission certificate, record of advanced standing, medical examination appointment slip, and aptitude test card. (Aptitude test card not required if admission certificate shows test has been taken.) You will receive a Combined Class Schedule. Freshmen, sophomores, and adult special students will receive registration blanks. Juniors and seniors will receive registration blanks when they report for registration.

3. Report for registration:

Freshmen and sophomores (Junior College) 113 Folwell Hall.

Juniors and seniors (Senior College) 217 Folwell Hall.

Any student who is a candidate for a degree from the College of Science, Literature, and the Arts and who has at least 90 credits, even if he has not met all the group requirements (English, foreign language, social science, natural science), should try to register as a Senior College student unless the words "On Probation" are stamped on his record of advanced standing.

Adult special students, 219 Administration Building.

4. Report to 106 Folwell Hall to have your registration blank tallied.
5. Report to a fee statement table in the University Armory to turn in your registration blank. You will be required to present your admission certificate and will receive a statement of fall quarter fees.
6. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Friday, September 25. Fees may be paid by mail and should be postmarked on or before September 25 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minnesota.
7. Report to classes Monday, September 28. Receipt for payments received by mail will be placed in the post-office box assigned, the number of which will be posted on the ground floor of the Coffman Memorial Union about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

COLLEGE OF EDUCATION, September 24-25:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for medical examination.
2. Report to the University Armory, 17th and University Avenues, to receive registration material. You will be required to present your admission certificate, record of advanced standing, and medical examination appointment slip. You will receive a registration blank, and a Combined Class Schedule. Students who wish to register for directed teaching should request a directed teaching card and instructions.

3. For special help or advice either before or after arrival, consult Miss Dora V. Smith, chairman of the New Students' Committee of the College of Education, Room 206, Burton Hall. Advanced standing students should attend the College of Education convocation for new students in the auditorium of Pattee Hall at 9:30 Thursday morning, September 24, when major and minor fields will be discussed in terms of teacher supply and demand.
 4. Report to your major adviser for registration. Department major advisers' names and offices are listed on the back of your registration blank. Your registration blank must be approved by an adviser.
 5. Report to checking desk, outside 208 Burton Hall. Make an appointment to take the educational psychological examination required of all students entering the College of Education before registration is accepted. These examinations are given daily from Wednesday through Saturday of Freshman Week.
 6. Report to tally desk, 106 Folwell Hall (unless registration blank was stamped tallied at checking desk).
 7. Report to fee statement table in the University Armory to turn in your registration blank. You will be asked to present your admission certificate. You will receive a statement of your fall quarter fees.
 8. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Friday, September 25. Fees may be paid by mail and should be postmarked on or before September 25 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minnesota.
 9. Report to classes Monday, September 28. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted on the ground floor of the Coffman Memorial Union about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.
- A passing grade in qualifying examinations is required of all students as a prerequisite to the work in the senior year in the College of Education. All registrations in student teaching, or courses involving student teaching or faculty supervision, are tentative and subject to cancellation for all students who have not received a passing mark in these examinations. Watch Official Daily Bulletin, *Minnesota Daily*, for announcement of time and place of examinations.

COLLEGE OF PHARMACY, September 24-25:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for medical examination.
2. Report to the University Armory, 17th and University Avenues, for matriculation, and obtain statement of fees. You will be required to present your admission certificate, record of advanced standing, and medical examination appointment slip.
3. Report to Bursar's Office, Administration Building, and pay fees.
4. Report to 101 Pharmacy Building for registration. You will be asked to present your paid fee receipt before registering. Registration and payment of fees should be completed before 4:30 p.m. Friday, September 25, to avoid late fees.
5. Report to classes Monday, September 28. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS,

September 24-25:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for medical examination.
2. Report to 203D Administration Building, University Farm, to obtain registration material. You will be required to present your admission certificate, record of advanced standing, medical examination appointment slip, and aptitude test card. (Aptitude test card not required if admission certificate shows test has been taken.)
3. Report for registration:
Agriculture—Room 200, Agricultural Botany Building, University Farm.
Forestry—Room 110, Green Hall, University Farm.
Home Economics—Room 110, Administration Building, University Farm.
Please follow this schedule for registration:
Seniors and adult special students... September 24, 8:30 a.m. to 12 m.
Juniors..... September 24, 1 p.m. to 4:30 p.m.
Sophomores..... September 25, 8:30 a.m. to 12 m.
Freshmen..... September 25, 1 p.m. to 4:30 p.m.
4. Turn in approved registration blank at Room 102, Administration Building, University Farm, to receive statement of fees.
5. Pay fees at Cashier's Office, University Farm, before 4:30 p.m. Friday, September 25, to avoid late fees.
6. Report to classes Monday, September 28. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

GENERAL COLLEGE, September 21-25:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for medical examination.
2. Report to the University Armory, 17th and University Avenues, for matriculation, and obtain registration material. You will be required to present your admission certificate and medical examination appointment slip.
3. Report to 202 Westbrook Hall for registration. Your registration blank must be approved by an adviser.
4. Report to one of the fee statement tables in the Armory to turn in your registration blank and receive a statement of your fall quarter fees. When you turn in your registration blank, you will be asked to present your admission certificate.
5. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Friday, September 25. Fees may be paid by mail and should be postmarked on or before September 25 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minnesota.
6. Report to classes Monday, September 28. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted on the ground floor of the Coffman Memorial Union about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

DENTAL HYGIENISTS, September 24-25:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for medical examination.

2. Report to the University Armory, 17th and University Avenues, for matriculation, and obtain statement of fees. You will be required to present your admission certificate, record of advanced standing, and medical examination appointment slip.
3. Report to Bursar's Office, Administration Building, and pay fees.
4. Report to 106 Medical Sciences Building for registration. You will be asked to present your paid fee receipt before registering. Registration and payment of fees should be completed before 4:30 p.m. Friday, September 25, to avoid late fees.
5. Report to classes Monday, September 28. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

SCHOOL OF NURSING, September 24-25:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for medical examination.
2. Report to the University Armory, 17th and University Avenues, to obtain statement of fees. Advanced standing students (five-year and graduate nurses) present admission certificate, record of advanced standing, and medical examination appointment slip, and receive statement of fees. Postgraduate students in nursing present admission certificate and medical examination appointment slip. Postgraduate students will receive a fee statement for the \$10 deposit required (exempt from tuition and incidental fee if in service).
3. Report to 125 Medical Sciences Building for registration. Advanced standing students will turn in their approved registration at the Armory to obtain statement of fees.
4. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Friday, September 25. Fees may be paid by mail and should be postmarked on or before September 25 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minnesota.
5. Report to classes Monday, September 28. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted on the ground floor of the Coffman Memorial Union about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

INSTITUTE OF TECHNOLOGY, September 24-25:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for medical examination.
2. Report to the University Armory, 17th and University Avenues, for matriculation, and obtain statement of fees. You will be required to present your admission certificate, record of advanced standing, and medical examination appointment slip.
3. Report to 206 Main Engineering Building for identification photograph. Obtain receipt.
4. Report for registration. Present fee statement and receipt for photograph.

Architecture.....	318 Main Engineering Building
Engineering Curricula.....	225 Main Engineering Building
Chem., Chem. Eng., Physics.....	Library, Chemistry Building
Mines and Metallurgy.....	103 Mines Building (Appleby Hall)

5. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Friday, September 25. Fees may be paid by mail and should be postmarked on or before September 25 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minnesota.
6. Report to classes Monday, September 28. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted on the ground floor of the Coffman Memorial Union about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

LAW, DENTISTRY, BUSINESS ADMINISTRATION, September 24-25:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for medical examination.
2. Report to the University Armory, 17th and University Avenues, for matriculation, and to obtain statement of fees. Present admission certificate, record of advanced standing, and medical examination appointment slip.
3. Report to Bursar's Office, Administration Building, to pay fees.
4. Report to college office and complete registration by 4:30 p.m. Friday, September 25:

Law School.....	214 Law Building
School of Dentistry.....	149 Medical Sciences Building
School of Business Administration.....	127 Vincent Hall

5. Report to classes Monday, September 28. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

MEDICAL SCHOOL, PUBLIC HEALTH, MEDICAL TECHNOLOGY, PHYSICAL THERAPY, September 24-25:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for medical examination.
2. Report to the University Armory, 17th and University Avenues, for matriculation, and to obtain registration material. Present admission certificate, record of advanced standing, and medical examination appointment slip.
3. Report for registration:

Medical School.....	136 Medical Sciences Building
Public Health.....	121 Millard Hall
Medical Technology.....	136 Medical Sciences Building
Physical Therapy.....	103 Hospital, West Wing

4. Report to a fee statement table in the University Armory to turn in your registration blank and obtain statement of fees.
5. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Friday, September 25. Fees may be paid by mail and should be postmarked on or before September 25 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minnesota.
6. Report to classes Monday, September 28. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted on the ground floor of the Coffman Memorial Union about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

UNIVERSITY COLLEGE, September 24-25:

1. Report to the Students' Health Service, University of Minnesota Hospitals, for medical examination.
2. Report to the University Armory, 17th and University Avenues, for matriculation, and to obtain registration material. Present admission certificate, record of advanced standing, and medical examination appointment slip.
3. Report to 143 Physics Building for registration.
4. Report to tally desk, 106 Folwell Hall.
5. Report to Window 15, Office of Admissions and Records, first floor, Administration Building, for fee statement.
6. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Friday, September 25. Fees may be paid by mail and should be postmarked on or before September 25 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minnesota.
7. Report to classes Monday, September 28. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted on the ground floor of the Coffman Memorial Union about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

PUBLIC HEALTH NURSING, September 23-25

1. Report to the Students' Health Service, University of Minnesota Hospitals, for medical examination.
2. Report to the University Armory, 17th and University Avenues, for matriculation, and to obtain registration material. Present admission certificate, record of advanced standing, and medical examination appointment slip.
3. Report to 121 Millard Hall for registration.
4. Report to a fee statement table in the University Armory to turn in your registration blank and obtain statement of fees.
5. Report to Bursar's Office, Administration Building, and pay fees before 4:30 p.m. Friday, September 25. Fees may be paid by mail and should be postmarked on or before September 25 to avoid late fees. When paying by mail, enclose your fee statement (all three copies) and your check or money order for the exact amount payable to the University of Minnesota. Envelopes should be addressed to the Bursar, University of Minnesota, Minneapolis, Minnesota.
6. Report to classes Monday, September 28. Receipts for payments received by mail will be placed in the post-office box assigned, the number of which will be posted on the ground floor of the Coffman Memorial Union about the third day after mailing. Students should save their fee receipts throughout the quarter and have them available to present to instructors and others upon request.

READ THE FOLLOWING ITEMS CAREFULLY—THEY MAY SAVE YOU UNNECESSARY DELAY AND INCONVENIENCE.

1. You are strongly advised to take the required tests and obtain your admission certificate before coming to the University. If you have not written the tests, arrange to come to the University before the registration period begins, if possible, to write these tests. Appointments for the tests may be made at 101 Eddy Hall at any time during the summer.

2. If you have not written the tests (if required) and it is not convenient for you to report earlier, the tests may be taken as follows:
 - a. College aptitude, English placement, and English theme (if either the first two or all three have to be taken)
Monday, September 21, 9:00 a.m. or 1:30 p.m., 150 Physics Building
 - b. English placement test and English theme
Monday, September 21, 9:00 a.m. or 1:30 p.m., 166 Physics Building
 - c. English theme
Monday, September 21, 9:00, 10:00, or 11:00 a.m., 133 Physics Building
3. If you have lost your admission certificate a duplicate may be obtained at Windows 18-20, Office of Admissions and Records, first floor, Administration Building.
4. If you have **not** received an admission certificate, and have had your credits forwarded from the last school attended, report to the Director of Admissions, Office of Admissions and Records, first floor, Administration Building, for an admission certificate.
5. If you wish special advice before proceeding with your registration, members of the faculty will be available for consultation in the University Armory, and the Committee on Vocational Counseling will be available in Room 101 Eddy Hall.
6. Students who have had college work elsewhere are not required to attend Freshman Week activities. Those students who may wish to do so, however, are urged to attend.

Lecture: "The University in Wartime"—Dean T. R. McConnell
Northrop Auditorium, Wednesday, September 23, 8:30 a.m.

Lecture: "The University's Counseling and Physical Fitness Program"—
Dean E. G. Williamson and Dr. Ruth Boynton
Northrop Auditorium, Thursday, September 24, 8:30 a.m.

Other activities, including lectures on professions, library inspection, and campus tours, will be announced in *Introduction to the University* (the Freshman Week Handbook) which may be obtained at the Information Booth in the Administration Building on the registration days.

PLEASE NOTE ESPECIALLY

Do not report to the Armory without the credentials referred to in the instructions.

Do not report to the Director of Admissions for an admission certificate until after you have written the tests (if required) and at least 12 hours have elapsed to permit their being scored.

BULLETINS AND GENERAL INFORMATION MAY BE OBTAINED AT THE OFFICE OF ADMISSIONS AND RECORDS, FIRST FLOOR, ADMINISTRATION BUILDING.

If your credentials are not on file in the Office of Admissions and Records, immediate arrangements (by telephone or telegraph) should be made to have credits and honorable dismissal forwarded.

T. E. PETTENGILL, Recorder

The Bulletin of the
UNIVERSITY of MINNESOTA

Department of Preventive Medicine
and Public Health
Announcement for the Years 1942-1944



Volume XLV, Number 41

June 24, 1942

*Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota.
Accepted for mailing at special rate of postage provided for in Section 1103, Act of
October 3, 1917, authorized July 12, 1918*

UNIVERSITY CALENDAR, 1942-43

Fall Quarter

1942			
September	21-26		Examinations for removal of conditions Physical examinations Registration period, ¹ College of Science, Literature, and the Arts, and General College
September	24-25		Registration days ¹ for all colleges not included above. Payment of fees closes for all students in Science, Literature, and the Arts, General College, Education, Public Health Nursing, Medical School, Medical Technology, Public Health, Physical Therapy, and for new students in other colleges except Graduate School
September	28	Monday	Fall quarter classes begin 8:30 a.m. ² First semester extension classes begin ³
October	3	Saturday	Last day for extension registration without penalty
October	10	Saturday	Last day for Graduate School registration and payment of fees
November	3	Tuesday	Election Day; a holiday (except for extension)
November	11	Wednesday	Armistice Day; a holiday (except for extension)
November	26	Thursday	Thanksgiving Day; a holiday
December	11-12 and 14-17		Final examination period
December	17	Thursday	Commencement Convocation Fall quarter ends 6:00 p.m. ⁴

Winter Quarter

December	24	Thursday	Payment of fees closes for all students in residence fall quarter in undergraduate colleges
1943			
January	4	Monday	Registration ¹ for new students in all colleges. Payment of fees closes for new students in all colleges except the Graduate School
January	5	Tuesday	Winter quarter classes begin 8:30 a.m. ²
January	16	Saturday	Last day for Graduate School registration and payment of fees
February	8	Monday	Second semester extension classes begin ³
February	12	Friday	Lincoln's Birthday; a holiday (except for extension)
February	13	Saturday	Last day for extension registration without penalty
February	22	Monday	Washington's Birthday; a holiday
March	12-13 and 15-18		Final examination period
March	18	Thursday	Commencement Convocation Payment of fees closes for all students in residence winter quarter in undergraduate colleges Winter quarter ends 6:00 p.m.

Spring Quarter

March	26-27		Registration ¹ for new students in all colleges except the Institute of Technology. Payment of fees closes at 12:00 noon, March 27 for new students in all colleges except Graduate School
March	29	Monday	Spring quarter classes begin 8:30 a.m. ²
April	10	Saturday	Last day for Graduate School registration and payment of fees
April	23	Friday	Good Friday; a holiday (except for extension)
May	31	Monday	Memorial Day; a holiday (except for extension)
June	4	Friday	Second semester extension classes close
June	4-5 and 7-11		Final examination period
June	11	Friday	Spring quarter ends 6:00 p.m.
June	12	Saturday	Seventy-first annual commencement

Summer Session

June	14-15		Registration, first term. Payment of fees closes at 4:00 p.m. June 15 for all colleges
June	16	Wednesday	First term Summer Session classes begin 8:00 a.m.
July	5	Monday	Independence Day; a holiday
July	22	Thursday	Commencement Convocation
July	23	Friday	First term closes
July	26	Monday	Second term registration and payment of fees close at 4:00 p.m. July 26 for all colleges
			Second term classes begin 8:00 a.m.
August	27	Friday	Second term closes

¹ Registration subsequent to the date specified will necessitate the approval of the college concerned. See also privilege fees for late registration, page 46 Bulletin of General Information. No student will be allowed to register in the University after one week from the beginning of the quarter excepting in unusual cases wherein special circumstances shall justify the appropriate committee of the college concerned permitting registration at a later date.

² First hour classes begin at 8:15 a.m. at University Farm.

³ This date does not refer to correspondence study courses, which may be started at any time during the year.

⁴ Extension classes continue to Saturday, December 19, and will resume Monday, January 4, 1943.

FACULTY

ADMINISTRATIVE OFFICERS

- Walter C. Coffey, M.S., LL.D., President of the University
Theodore C. Blegen, Ph.D., L.H.D., Dean of the Graduate School
Harold S. Diehl, M.A., M.D., D.Sc., Dean of the Medical Sciences
True E. Pettengill, M.S., Acting Director of Admissions and Records and Recorder
Gaylord W. Anderson,* B.A., M.D., Dr.P.H., Head of the Department of Preventive
Medicine and Public Health
Ruth B. Freeman, R.N., M.A., Director of the Course in Public Health Nursing

DEPARTMENT OF PREVENTIVE MEDICINE AND PUBLIC HEALTH

PUBLIC HEALTH ADMINISTRATION AND EPIDEMIOLOGY

- Gaylord W. Anderson,* B.A., M.D., Dr.P.H., Professor and Head
Ruth E. Boynton, M.S., M.D., Professor; Director of Students' Health Service
Albert J. Chesley, M.D., Clinical Professor; Executive Officer, Minnesota State Board
of Health
Francis E. Harrington, B.S., M.D., Clinical Professor; Commissioner of Health, Min-
neapolis
J. Arthur Myers, M.D., Ph.D., Professor
Ralph V. Ellis, M.A., M.D., Associate Professor
Orianna McDaniel, M.D., Clinical Associate Professor Emeritus; Director of the Divi-
sion of Preventable Diseases, Minnesota Department of Health
Ruth E. Grout, Ph.D., C.P.H., Assistant Professor
Lucy S. Heathman, Ph.D., M.D., Clinical Assistant Professor; Chief of Laboratories and
Assistant Director of the Division of Preventable Diseases, Minnesota Department
of Health
Leslie W. Foker, B.S., M.D., M.P.H., Lecturer; Medical Director, Industrial Hygiene
Unit, Minnesota Department of Health
Robert N. Barr,* B.S., M.D., M.P.H., Clinical Instructor; Director of Rural Health Unit
Services, Minnesota Department of Health
Paul W. Kabler,* M.D., Ph.D., Clinical Instructor; Bacteriologist, Division of Prevent-
able Diseases, Minnesota Department of Health
Viktor O. Wilson, B.S., M.D., M.P.H., Clinical Instructor; Director, Division of Child
Hygiene, Minnesota Department of Health

PUBLIC HEALTH ENGINEERING AND SANITATION

- Frederic H. Bass, B.S., Professor of Municipal and Sanitary Engineering and Head of
the Department of Civil Engineering
Charles A. Mann, Ph.D., Professor of Chemical Engineering and Chief of the Division
of Chemical Engineering
Harold A. Whittaker, B.A., Clinical Associate Professor; Director of the Division of
Sanitation, Minnesota Department of Health
Theodore A. Olson,* M.A., Assistant Professor; Biologist, Division of Sanitation, Min-
nesota Department of Health

* On leave of absence in military service.

- George O. Pierce, M.S., C.P.H., Assistant Professor; Public Health Engineer, Division of Sanitation, Minnesota Department of Health
- Herbert M. Bosch,* B.S., M.P.H., Lecturer; Public Health Engineer, Division of Sanitation, Minnesota Department of Health
- Philip R. Carter,* D.V.M., M.P.H., Lecturer; Sanitarian, Division of Sanitation, Minnesota Department of Health
- Jack J. Handy, B.S., Lecturer; Public Health Engineer, Minneapolis Health Department
- Malcolm C. Hope, B.Chem.Eng., M.S., Lecturer; Associate Public Health Engineer, Minnesota Department of Health
- George S. Michaelson, B.Chem.Eng., M.S., Lecturer; Assistant Public Health Engineer, Minnesota Department of Health
- Harvey G. Rogers,* Lecturer; Public Health Engineer, Division of Sanitation, Minnesota Department of Health
- Dean M. Taylor, B.Chem.Eng., Lecturer; Associate Public Health Engineer, Division of Sanitation, Minnesota Department of Health

PUBLIC HEALTH NURSING

- Ruth B. Freeman, R.N., M.A., Assistant Professor and Director of the Course in Public Health Nursing
- Mellie F. Palmer, R.N., B.S., C.P.H., Assistant Professor
- Laura Draper, B.A., B.S., R.N., Clinical Assistant Professor; Director of the Minneapolis Community Health Service
- Olivia T. Peterson,† R.N., Clinical Assistant Professor; Director of the Division of Public Health Nursing, Minnesota Department of Health
- Phyllis P. Harris, R.N., M.S., Instructor
- Elma R. Harrison, R.N., Instructor
- Gertrude Lyons,† R. N., Clinical Instructor; Director of Family Nursing Service of St. Paul
- Vera J. C. McKinnon, R.N., Instructor
- Pearl Shalit, R.N., M.S.S., Clinical Instructor; Director of Education, Family Nursing Service of St. Paul
- Jean Taylor, R.N., B.S., C.P.H., Clinical Instructor; Director of Education, Minneapolis Community Health Service

PERSONAL HEALTH AND HEALTH EDUCATION

- Ruth E. Boynton, M.S., M.D., Professor; Director of the Students' Health Service
- J. Arthur Myers, M.D., Ph.D., Professor
- William A. O'Brien, M.D., Professor; Director of Postgraduate Medical Education
- Ralph V. Ellis, M.A., M.D., Associate Professor
- Carl J. Potthoff, M.D., M.P.H., Associate Professor
- John J. Boehrer, B.A., M.D., Assistant Professor
- Donald W. Cowan, M.D., M.S., Assistant Professor
- Ruth E. Grout, Ph.D., C.P.H., Assistant Professor
- Myron M. Weaver, M.D., Ph.D., Assistant Professor
- Hally J. Fisher, R.N., Instructor Emeritus
- William H. Hollinshead,* M.D., Instructor
- Phillip D. Kernan, B.S., M.D., Clinical Instructor
- Ramona L. Todd, M.D., Ph.D., Instructor

* On leave of absence in military service.

† On leave of absence with the American Red Cross.

BIOSTATISTICS

Alan E. Treloar, Ph.D., Associate Professor
 Borghild G. Behn, Ph.D., Instructor
 William E. Gordon, Ph.D., Instructor

FIELD ASSOCIATES

Marie Bestul, R.N., B.S., Nurse Supervisor, Rural Health Unit District No. 3, Minnesota Department of Health, Rochester
 Lucille Daniels, B.A., Supervisor of Curative Workshop, Minneapolis Community Health Service
 Adelia Eggestine, R.N., M.A., Field Advisory Nurse, Minnesota Department of Health
 Laura N. Hegstad, R.N., B.S., Nurse Supervisor, Rural Health Unit District No. 2, Minnesota Department of Health, Mankato
 Adah Hershey, R.N., Director of the Public Health Nursing Association, Des Moines, Iowa
 Leeta Holdrege, R.N., Director, Omaha Visiting Nurse Service, Omaha, Nebraska
 Dagmar Johnson, R.N., Nurse Supervisor, Rural Health Unit District No. 1, Minnesota Department of Health, Bemidji
 Mary A. Johnson, R.N., B.S., Field Advisory Nurse, Division of Child Hygiene, Minnesota Department of Health
 Leah Keable, R.N., Nurse Supervisor, Rural Health Unit District No. 4, Minnesota Department of Health, Duluth
 Eleanor Mikkelson, R.N., B.S., Field Advisory Nurse, Minnesota Department of Health
 Marie Neuschaeffer, R.N., B.S., Director, Division of Public Health Nursing, State Department of Health, Des Moines, Iowa
 Ann Nyquist, R.N., Field Advisory Nurse, Division of Child Hygiene, Minnesota Department of Health
 Astrid Peterson, R.N., Supervisor, Rural Hennepin County Nursing Service
 Nora Rolf, R.N., B.S., Field Advisory Nurse, Minnesota Department of Health
 Cornelia Van Kooy, R.N., Director, Division of Public Health Nursing, Wisconsin State Health Department, Madison, Wisconsin

SPECIAL LECTURERS, 1942-43

Harold S. Adams, Director of Food and Sanitation, Department of Public Health, Flint, Michigan
 Leverett D. Bristol, M.D., Health Director, American Telephone and Telegraph Company, New York City
 Joel I. Connolly, Assistant to the President, Bureau of Public Health Engineering, City Department of Health, Chicago
 Dorothy Deming, General Director, National Organization for Public Health Nursing, New York City
 Mayhew Derryberry, Ph.D., Chief, Health Education Studies, National Institute of Health, U.S. Public Health Service, Bethesda, Maryland
 Ruth Grout, Ph.D., C.P.H., Senior Supervisor of Health Education for TVA, Chattanooga, Tennessee
 Ruth Kahl, C.P.H.N., Nursing Consultant, U.S. Public Health Service, Denver, Colo.
 Chester S. Keefer, M.D., Director of Evans Memorial Laboratory, Massachusetts Memorial Hospital

- Pearl McIver, Senior Public Health Nursing Consultant, U.S. Public Health Service, Washington, D.C.
- Karl F. Meyer, M.D., Director Hooper Foundation and Public Health Curricula, University of California Medical Center, San Francisco
- Eleanor Mumford, B.S., Associate for Nursing Activities, National Society for Prevention of Blindness, New York City
- Rebecca Pond, R.N., Assistant Director of Nursing Service, Midwestern Branch, American Red Cross, St. Louis, Missouri
- William Shepard, M.D., Pacific Coast Welfare Director, Metropolitan Life Insurance Company, San Francisco, California
- Grover C. Sherrard, M.D., Assistant Surgeon, U.S. Public Health Service, Washington, D.C.
- Nathan Sinai, D.P.H., Professor of Hygiene and Public Health, University of Michigan
- Louis F. Warrick, State Sanitary Engineer, Wisconsin State Board of Health, Madison, Wisconsin
- Alfred H. Wieters, Director of the Division of Public Health Engineering, Iowa State Department of Health, Des Moines, Iowa

MEMBERS OF OTHER DEPARTMENTS OF THE UNIVERSITY GIVING
COURSES IN PREVENTIVE MEDICINE AND PUBLIC HEALTH

- Frank E. Burch, M.D., Professor and Head of the Department of Ophthalmology
- Eric K. Clarke, M.D., Professor of Pediatrics and Psychiatry and Director of Psychiatric Clinic for Children
- Lawrence R. Boies, M.A., M.D., Assistant Professor and Director of the Division of Otolaryngology
- Eva G. Donelson, Ph.D., Assistant Professor, Division of Home Economics
- Raymond E. Johnson, D.D.S., Clinical Professor, School of Dentistry
- John F. Pohl, M.D., Clinical Instructor, Orthopedics Department
- Dorothea F. Radusch, D.D.S., M.S., Clinical Assistant Professor, School of Dentistry

COURSES IN PREVENTIVE MEDICINE AND PUBLIC HEALTH

GENERAL STATEMENT

The Department of Preventive Medicine and Public Health offers a wide selection of general and professional courses. The general courses are designed for the student who desires some knowledge of personal health and an understanding of the community programs that exist for the promotion of the public health. The professional courses are intended to furnish technical training for those who seek a career in public health work or who wish to use technical knowledge and procedures in their future work in allied fields. Because of its close relationship to public health work, the biostatistical instruction at the University is incorporated as a part of the work of the Department of Preventive Medicine and Public Health.

PROFESSIONAL TRAINING COURSES IN PUBLIC HEALTH

In keeping with the plans of the United States Public Health Service for the training of public health personnel under the terms of the Social Security Act, the University of Minnesota provides courses for the training of health officers, public health engineers, and public health nurses. Arrangements may also be made for special courses of study for other persons with professional training and public health experience, notably dentists, veterinarians, and laboratory personnel. The course of study in public health nursing leads to either a Bachelor's or a Master's degree; the program for the other professional groups leads to the degree of master of public health or master of science.

The Department of Preventive Medicine and Public Health was authorized and established by the Board of Regents in 1922 in response to the increasing demand for health education and for trained leaders in public health. Since that time it has developed a teaching program in close collaboration with other departments of the medical sciences group, and with other departments of the University dealing with collateral fields of knowledge—in particular, engineering, biology, and social sciences. The training of personnel for public health service is a part of the special interest of the University in training individuals for public service. Unusually broad facilities are afforded for acquiring factual material, techniques, and points of view which are conducive to an intelligent approach to the problems of the various fields of public health service.

Equally important in this type of education is the opportunity to observe the application of these principles by official and voluntary agencies. To this end, close working relationship has been developed with the Minnesota State Department of Health. Its Divisions of Preventable Diseases, of Sanitation, of Child Hygiene, and of Public Health Nursing are housed on the University campus. Teaching has been recognized as one of its legitimate activities. The state health officer, his division heads, and technical assistants have therefore assumed a responsible and interested part in the instruction of students enrolled in the University. The directing heads and technical assistants of a large number of official and voluntary health organizations in Minnesota, Iowa, Nebraska, and Wisconsin have also assisted in the effort to give supervised experience in field activities in both urban and rural areas.

With the establishment of a training center at the University of Minnesota, it has been further possible to invite health officers and sanitary engineers from neighboring states, and officers of the United States Public Health Service to participate in planning the curriculum and, as guest lecturers, to discuss problems peculiar to their fields of

interest. The teaching program has been aided by funds made available under the Social Security Act.

The recent rapid expansion in public health work has created a demand for trained personnel. The University recognizes that adequate training for this field cannot be acquired in a few weeks. There is a general consensus of opinion that the training period should extend over at least one academic year or three university "quarters" of postgraduate study. As far as possible those students entering the University for this type of study should, therefore, attempt to devote a year to this training. The arrangement of courses by academic quarters is designed to present a logical sequence of material.

"Short courses."—Owing to the present war conditions the demands for public health personnel are so acute that students may frequently be unable to devote more than one or two quarters to study at this time, being compelled to return to their posts before completing their training. For the benefit of such students, the department has attempted to concentrate certain fundamental courses in a single quarter and, if the demand warrants, will repeat such courses in other quarters. In this way the student who can attend the University for only one or two quarters can obtain the maximum amount of fundamentals in the time available but will miss the supplemental and collateral courses needed for a degree. All courses so taken will be of usual academic grade and will count toward a degree if the student returns at a later date.

Summer Session.—The Summer Session at the University of Minnesota consists of two terms, each of between 5 and 6 weeks. In each of these terms are concentrated certain courses in preventive medicine and public health that are spread over one or two quarters of the regular year. Altho the offerings for the Summer Session vary somewhat from year to year, they are planned to make available some of the important fundamental courses each year with variation as to the supplemental courses. Visiting lecturers each summer bring new points of view in courses that are not available during the regular year. The student should consult the Bulletin of the Summer Session for details or communicate with the Department of Preventive Medicine and Public Health.

COURSES FOR TRAINING MEDICAL HEALTH OFFICERS

Committee on Curriculum for Physicians: Gaylord W. Anderson, Albert J. Chesley, Harold S. Diehl.

Requirements for admission.—

1. The degree of doctor of medicine from an acceptable institution (i.e., in Class A of the American Medical Association).
2. One year's experience as an intern in an approved hospital, or an acceptable substitute.

Application blanks for admission will be supplied by the Department of Preventive Medicine and Public Health, upon request. They should be filed with the University at least two weeks before reporting for registration. A letter from the registrar of the college of graduation, *certifying to the professional degree and including an official transcript of the student's college record*, should accompany the application.

Requirements for degree.—See page 17.

PLAN OF INSTRUCTION

The course of study leading to the degree of master of public health covers three academic quarters. These quarters may be taken in a single academic year or divided among two or more years according to the preference of the student. The following program of courses is suggested. (See page 19 for description of courses.)

Fall Quarter

No.	Title	Credits
P.M.&P.H. 102*	Environmental Sanitation I	3
P.M.&P.H. 104*	Epidemiology I	5
P.M.&P.H. 107	Child and Adult Hygiene	3
Bact. 124	Filterable Viruses	4
Pol.Sci. 120	Municipal Functions	3

Winter Quarter

P.M.&P.H. 105	Epidemiology II	3
P.M.&P.H. 106*	Public Health Administration	3
P.M.&P.H. 118	Environmental Sanitation II	2
P.M.&P.H. 125	Community Health Education	3
Med. 205	Tuberculosis	2
Ped. 158	Contagious Diseases	1
Pol.Sci. 121	Municipal Administration	3

Spring Quarter

P.M.&P.H. 109	Epidemiology III	3
P.M.&P.H. 122	Public Health Administration Problems	3
P.M.&P.H. 170†	Supervision in Public Health Nursing	3
P.M.&P.H. 210	Seminar in Preventive Medicine and Public Health	1
Journ. 78	Press Relations	3

Among the courses from which the student may choose substitutes for certain of the above courses are the following:§

No.	Title	Instructor
Bact. 101, 102	Medical Bacteriology	Dr. Larson
Bact. 116	Immunity	Dr. Larson
Bact. 120	Diseases of Animals Transmissible to Man	Dr. Green
C.W. 130-131	Child Development	Mr. Anderson
Med. 269	Syphilis Therapy	Dr. Michelson
Ped. 102	Fundamental Principles of Nutrition and Metabolism as Applied to Children	Dr. McQuarrie
P.M.&P.H. 108	Care of the Handicapped Child	Ar
P.M.&P.H. 110	Biometric Principles	Mr. Treloar
P.M.&P.H. 111	Biostatistics Laboratory	Mrs. Behn
Pol.Sci. 122	Municipal Problems	Mr. Ludwig
Psy. 144-145	Abnormal Psychology	Mr. Bird
Soc. 100	Social Psychology	Mr. Kirkpatrick
Zool. 144-145-146	Animal Parasites and Parasitism	Mr. Riley

COURSES FOR TRAINING PUBLIC HEALTH ENGINEERS

Committee on Curriculum for Engineers: Gaylord W. Anderson, Frederic H. Eass, Harold A. Whittaker.

Requirements for admission.—Entrance upon work for which credit may be applied toward the degree of master of public health or master of science with a major in public health engineering is limited to those who have (a) an engineering degree, preferably with a major in sanitary, civil, or chemical engineering, or (b) a university degree with adequate training in the basic and applied sciences, including bacteriology. It is desirable, tho not required, that applicants shall have had some actual experience and have demonstrated an interest in the field of public health engineering.

* Required course.

† Required course. P.M.&P.H. 171 may be substituted for P.M.&P.H. 170.

§ A course in public speaking, designed to meet the needs of the professional person, is available in Extension; it does not carry academic credit.

Application blanks will be supplied upon request to the Department of Preventive Medicine and Public Health. They should be filed with the University at least two weeks before reporting for registration. A letter from the registrar of the college of graduation, certifying to the professional degree, and a transcript of the applicant's college record, should accompany the application. Applicants who are deficient in any of the above requirements but who are otherwise acceptable, may register as special students for such courses as may be available in the desired subjects. The Department of Preventive Medicine and Public Health will advise applicants and assist them in registering in such courses.

Requirements for degree.—See page 17.

PLAN OF INSTRUCTION

The course of instruction leading to the Master's degree covers a minimum of three quarters of study. These quarters may be taken in a single academic year or divided among two or more years according to the preference of the student.

The program of study to be followed should include such courses as will supplement the engineer's previous education and experience in order that he may acquire a training in all phases of environmental sanitation and in other important branches of public health work. The program, therefore, includes courses dealing with water, milk, and food sanitation; sewage, excreta, and waste disposal; air hygiene; occupational hygiene; control of animals and insects involved in the spread of disease; sanitation of building and recreational areas; public health administration; epidemiology; public health nursing; and biostatistics.

The following program of courses is suggested. (See page 19 for description of courses.)

Fall Quarter

REQUIRED COURSES

No.	Title	Credits
P.M.&P.H. 102	Environmental Sanitation I.....	3
P.M.&P.H. 104	Epidemiology I	5
P.M.&P.H. 110†	Biometric Principles	3
P.M.&P.H. 111†	Biostatistics Laboratory	2
P.M.&P.H. 171*	Problems in Public Health Nursing.....	3

ELECTIVES

Bact. 53§	General Bacteriology	(5)
C.E. 161	Hydrology	4
Ch.E. 132	Organic Industrial Chemistry.....	3
M.E. 160	Heating, Ventilating, and Air Conditioning	3
M.E. 169	Heating, Ventilating, and Air Conditioning Laboratory.....	2
Pol.Sci. 120	Municipal Functions	3
P.M.&P.H. 117	Sanitary Biology	2

* P.M.&P.H. 170s may be substituted for this.

† May be taken in either fall or spring quarter.

§ No graduate credit allowed for this course.

Winter Quarter

REQUIRED COURSES

No.	Title	Credits
P.M.&P.H. 105	Epidemiology II	3
P.M.&P.H. 106	Public Health Administration	3
P.M.&P.H. 112	Water Supply Sanitation	4
P.M.&P.H. 113	Sewage, Excreta, and Waste Disposal	4

ELECTIVES

Anal.Chem. 140	Water Analysis	3
Bact. 53§	General Bacteriology	(5)
C.E. 162	Water Supply and Sewerage	3
D.H. 102	Dairy Bacteriology	3
M.E. 165	Advanced Heating, Ventilating, and Air Conditioning	3
M.E. 169	Heating, Ventilating, and Air Conditioning Laboratory	2
Pol.Sci. 121	Municipal Administration	3
P.M.&P.H. 120	Correlation Analysis	3
P.M.&P.H. 121	Correlation Analysis Laboratory	2
P.M.&P.H. 125	Community Health Education	3

Spring Quarter

REQUIRED COURSES

P.M.&P.H. 110†	Biometric Principles	3
P.M.&P.H. 111†	Biostatistics Laboratory	2
P.M.&P.H. 115	Food Sanitation	3
P.M.&P.H. 116	Public Health Engineering Administration	2

ELECTIVES

Bact. 53§	General Bacteriology	(5)
Bact. 120	Diseases of Animals Transmissible to Man	3
Bact. 123	Applied Bacteriology	3
C.E. 163	Water Supply and Sewerage	3
C.E. 167	Industrial Hygiene Engineering	3
C.E. 172	City Planning	3
Ch.E. 131	Inorganic Industrial Chemistry	3
Ch.E. 140	Sanitary Chemistry	3
D.H. 51§	Market Milk	(3)
M.E. 166	Refrigeration	3
M.E. 167	Advanced Heating, Ventilating, and Air Conditioning	3
M.E. 169	Heating, Ventilating, and Air Conditioning Laboratory	2
P.M.&P.H. 130	Statistical Inference	3
P.M.&P.H. 131	Sampling Laboratory	2

COURSES FOR TRAINING PUBLIC HEALTH NURSES

Requirements for admission.—Candidates for admission to the course in public health nursing must meet the entrance requirements of the University.* They must present approved high school credentials, if unable to do this, they are required to take certain special entrance examinations. Students who have to take these special examina-

* Occasionally students who are not eligible for matriculation in the University but who have had considerable experience in public health nursing may be accepted as "special students," but will not be entitled to academic credit. Students who wish to enter in this manner should write to the director of the Course in Public Health Nursing and plan for a personal interview.

† May be taken in either fall or spring quarter.

§ No graduate credit allowed for this course.

tions should come to the University three or four days before the date of registration. (See Bulletin of General Information which may be obtained from the director of admissions and records.)

Candidates must be graduates of a recognized school of nursing.

Students should write directly to the director of admissions and records of the University of Minnesota for application blanks, including the supplemental form for nurses. These should be filled out and forwarded to the director of admissions and records at the University of Minnesota at least one month prior to the date fixed for registration. University approval of a candidate's credentials is necessary before registration.

Advanced credit for the professional nursing course will be determined by the Nursing Committee, who will indicate any additional hospital services to be completed before full credit is granted. Forty-five credits represent approximately the average advanced standing granted for a satisfactory course of study in a school of nursing.

All students should be in good health and are required to have a complete health examination during the first quarter in residence and an annual examination while enrolled in the University. A final physical examination is also required before receiving a degree. If the student is not in residence during the final quarter, examination may be done by a private physician and reported on a blank to be furnished by the Students' Health Service.

Part-time employment.—Students who wish to obtain part-time work in a hospital while they are attending the University should apply directly to the superintendent of nurses at the following hospitals: University of Minnesota Hospitals, Minneapolis; General Hospital, Minneapolis. Part-time employment is occasionally available at other hospitals in Minneapolis or St. Paul and also through the University Employment Bureau. Information regarding loans and scholarships and employment may be obtained from the director of admissions and records by writing for the Bulletin of General Information. Students may not ordinarily work while they are having field experience.

Field observation prior to matriculation.—Field experience, or at least one week's observation of home visiting in a public health agency, is a prerequisite for the first courses in public health nursing. The University will arrange for this period of observation for students who have not had such experience and who cannot provide for it in their own community prior to beginning study. All requests for such arrangement must be made to the Department of Preventive Medicine and Public Health. Arrangements will then be made for a period of observation of public health nursing in Minneapolis or St. Paul *preceding registration*.

Plan of instruction.—Students planning to take their first work in public health nursing should stay at least two quarters as several of the courses extend over this period. Students who are planning to stay more than a year are advised to take their general academic work before their professional courses.

New students.—New students entering in the fall quarter, even when they enter with advanced standing, may take advantage of Freshman Week activities. The *Introduction to the University* (Freshman Week Handbook) may be obtained at the office of admissions and records. The following activities are especially recommended: the lectures on the library, the tour of the library, and the lectures on "How To Study."

Field work.—Field work is an essential part of the training of any public health nurse. Experience in an urban family health agency and in rural and school services is required for the degree and the certificate in public health nursing. Field work with a family health agency in an urban area can usually be arranged for students

who plan to stay three or more quarters, provided application is made at least two quarters in advance.

Field experience in rural and school services is arranged for students who have completed their work in a family health agency. Application for this work should be made well in advance, as only a limited number of students can be taken each quarter. Students taking field work are required to furnish their own uniforms. Transportation to and from the field, and board and lodging must be financed by the student. *More valuable rural experience is available to students who can bring their own cars.* Students taking field work, except in supervision, are required to devote their entire time to their field training and cannot expect to take formal courses on the campus at the same time.

The opportunity to observe and take part in closely supervised field work has been arranged in collaboration with the Minnesota State Department of Health, the municipal health departments of Duluth, Minneapolis, and St. Paul, the Minneapolis Community Health Service, the Family Nursing Service of St. Paul, the Iowa State Department of Health and Public Health Nursing Association of Des Moines, Iowa, the Visiting Nurse Service of Omaha, Nebraska, and the Division of Public Health Nursing of the Wisconsin Department of Health.

Course of study.—The course of study, outlined on page 15, leads to a bachelor of science degree with a major in public health nursing. This course is offered in the Medical School and students are registered in that school. The College of Education also offers a program of study for nurses leading to a Bachelor's degree.

The course leading to a certificate in public health nursing is offered only to students who already have a Bachelor's degree. (See page 15 for special curriculum.) Students who can satisfactorily meet the requirements may work for a Master's degree instead of a certificate in public health nursing if they wish. (See page 16 of this bulletin and the Graduate School Bulletin for further information.)

Students are requested to plan their course of study after careful reading of the bulletin before they register. This plan should be made tentatively for all the quarters they expect to stay in the University. These programs must be approved by the major adviser at registration.

Requirements for degree.—A total of 180 credits is required for a degree with a major in public health nursing. A certificate in public health nursing is granted at the same time as this degree. The usual number of credit hours taken each quarter is 15. The student is expected to maintain a satisfactory academic standing while attending the University and may not graduate with less than a C average in all work as well as a C average in the major sequence. For every 5 honor points in excess of 1 honor point per credit, the credit hours required for graduation are diminished by one, but the student must complete all the required courses in the curriculum.

For requirements for the advanced degree in public health nursing see page 17 of this bulletin.

The curriculum in the College of Education leading to a bachelor of science degree with a major in public health nursing differs from the above curriculum only in that 26 credits in education are required, and this leaves 0-15 free electives depending upon the subjects chosen.

Residence requirements.—At least one year in residence is required for the bachelor of science degree; two quarters must be in the senior year. Thirty of the 45 credits for the certificate in public health nursing must be taken at the University of Minnesota.

CURRICULUM FOR THE BACHELOR OF SCIENCE DEGREE WITH A MAJOR
IN PUBLIC HEALTH NURSING

REQUIRED COURSES

English		9-15
(The required course will depend upon the results of the English placement test which must be taken before the date of registration)		
Social Sciences		
Soc. 1	Introduction to Sociology.....	5
Soc. 49	Social Pathology	3
Soc. 129 or 90	Principles of Social Case Work.....	3
	Elective in child welfare group.....	3
	Courses from social science group exclusive of sociology (history, political science, economics)	9
		<hr/> 23
Natural Sciences		
Psy. 1-2	General Psychology	6
Bact. 53 or 101	General Bacteriology or Medical Bacteriology.....	5
	Courses from science group (bact., chem., zool., etc.).....	14
		<hr/> 25
Professional Courses		
P.M.&P.H. 53	Elements of Preventive Medicine and Public Health.....	5
P.M.&P.H. 62-63	Principles of Public Health Nursing.....	6
P.M.&P.H. 65	Field Work in School Nursing	} 15-23*
P.M.&P.H. 66	Field Work in Rural Nursing	
P.M.&P.H. 67	Field Work in Family Health Agency	
P.M.&P.H. 133 or 61	Mental Hygiene Aspects of Public Health Nursing.....	3
	Electives from Department of Preventive Medicine and Public Health.....	8§
	Free electives from any department.....	27-41
		<hr/> 135
Advanced standing for three years hospital training.....		45†
		<hr/> 180

CURRICULUM FOR CERTIFICATE IN PUBLIC HEALTH NURSING

(Open only to students with a Bachelor's degree)

Students admitted to this curriculum must have had courses in bacteriology, psychology, and sociology in addition to their nurses' training, and must also have a Bachelor's degree.

Course Requirements for a Certificate

No.	Title	Credits
P.M.&P.H. 53	Elements of Preventive Medicine and Public Health.....	5
P.M.&P.H. 62-63	Principles of Public Health Nursing.....	6
P.M.&P.H. 65	Field Work in School Nursing	} 15-23*
P.M.&P.H. 66	Field Work in Rural Nursing	
P.M.&P.H. 67	Field Work in Family Health Agency	
P.M.&P.H. 133 or 61	Mental Hygiene Aspects of Public Health Nursing.....	3
	Electives from Department of Preventive Medicine and Public Health.....	6
Soc. 129	Principles of Social Case Work.....	3
	Electives to be chosen from related departments.....	2-7

This curriculum requires a total of 45 credits, that is, 3 to 3½ quarters' work, including field work.

* Exemption from part of this requirement may be given for satisfactory public health nursing experience obtained on an approved staff or in the undergraduate nursing curriculum.

† Approximately. Additional electives will be required if less than 45 credit hours are allowed for hospital training.

§ Or more.

SPECIAL COURSES IN ORTHOPEDIC NURSING

During the academic year 1941-42 special courses of instruction in orthopedic nursing were made available for advanced public health and institutional nurses. These courses, made possible by a grant from the National Foundation for Infantile Paralysis, Inc., and conducted in co-operation with the Division of Crippled Children of the Minnesota Department of Social Security, the Gillette State Hospital for Crippled Children, and the Curative Workshop of Minneapolis, are designed to assist nurses with the problem of home care of orthopedic cases. A limited number of students who had had prior training and experience in public health nursing have been accepted. It is hoped that these courses may be continued in the coming year. During 1941-42 the following courses were included.

Winter Quarter

No.	Title	Credits
P.M.&P.H. 71	Functional Anatomy	4
P.M.&P.H. 72	Orthopedic Nursing	5
P.M.&P.H. 106	Public Health Administration	3
P.M.&P.H. 108	Care of the Handicapped Child	2

Spring Quarter

P.M.&P.H. 68	Field Work in Orthopedic Nursing	15
	A. Gillette State Hospital for Crippled Children	
	B. Curative Workshop of Minneapolis	
	C. Field Clinics for Crippled Children of Minnesota Department of Social Security	

PROGRAM OF STUDY IN PUBLIC HEALTH NURSING LEADING TO A MASTER'S DEGREE

Suitably qualified students who have already received a Bachelor's degree may be admitted to candidacy for the degree of master of science or master of public health. (See below.) It is expected that public health nurses desiring to work for a Master's degree will have had basic courses in Principles of Public Health Nursing, Elements of Preventive Medicine and Public Health, Mental Hygiene, and university courses in field work or equivalent practical experience. If the student is lacking in any of these courses she should plan to take them at the University before proceeding to advanced work. Application blanks may be obtained from the Department of Preventive Medicine and Public Health. They should be returned directly to the University and be accompanied by an official transcript of the student's college and hospital record. The program leading to the Master's degree requires at least three quarters of work. Students wishing to study for the master of science degree should consult the Graduate School Bulletin for further information.

Courses to be taken by the candidate for the Master's degree must include the following unless the student has taken the course as an elective toward the Bachelor's degree:

No.	Title	Credits
P.M.&P.H. 102	Environmental Sanitation I	3
P.M.&P.H. 104	Epidemiology I	5
P.M.&P.H. 106	Public Health Administration	3
P.M.&P.H. 110†	Biometric Principles	3
P.M.&P.H. 111†	Biostatistics Laboratory	2
P.M.&P.H. 170	Supervision in Public Health Nursing	3

† Required unless student elects P.M.&P.H. 105 and 109.

REQUIREMENTS FOR DEGREES

The professional training courses in public health lead to degrees of bachelor of science, master of science, or master of public health according to the background and training of the student and the courses elected.

Bachelor of science with major in public health nursing.—This degree is offered only to nurses who have already completed their hospital training and completed the courses of study as outlined on pages 14 and 15.

Master of science.—All candidates for the degree of master of science must be admitted by the dean of the Graduate School. See the Bulletin of the Graduate School for details of requirements for admission and degrees.

Master of public health.—All candidates for the degree of master of public health are registered in the Medical School. Students will be admitted to candidacy who have already obtained professional training in medicine, dentistry, veterinary medicine, engineering, public health nursing, or similar fields. Admission blanks may be obtained from the Department of Preventive Medicine and Public Health.

All candidates for the degree of master of public health must complete a program of at least three quarters of approved study totaling 45 credit hours in courses of graduate grade and including courses in public health administration, epidemiology, sanitation, public health nursing, and statistics. Electives to complete the 45-credit-hour requirement must have the approval of the student's adviser. An honor point ratio of 1.5 (C+) must be maintained.

COURSES OF STUDY

COURSES IN PUBLIC HEALTH ADMINISTRATION AND EPIDEMIOLOGY

No.	Title	Credits
P.M.&P.H. 53	Elements of Preventive Medicine and Public Health.....	5
P.M.&P.H. 58	Maternal and Child Hygiene.....	3
P.M.&P.H. 59	Health of the School Child.....	3
P.M.&P.H. 60	Tuberculosis and Its Control.....	2
P.M.&P.H. 100	Preventive Medicine.....	4
P.M.&P.H. 101	Public Health Administration and Field Work.....	2
P.M.&P.H. 103	Public Health Bacteriology.....	Ar
P.M.&P.H. 104	Epidemiology I.....	5
P.M.&P.H. 105	Epidemiology II.....	3
P.M.&P.H. 106	Public Health Administration.....	3
P.M.&P.H. 107	Child and Adult Hygiene.....	3
P.M.&P.H. 108	Care of the Handicapped Child.....	2
P.M.&P.H. 109	Epidemiology III.....	3
P.M.&P.H. 122	Public Health Administration Problems.....	3
P.M.&P.H. 125	Community Health Education.....	3
P.M.&P.H. 135	Conservation of Hearing.....	1
P.M.&P.H. 136	Sight Conservation.....	1
P.M.&P.H. 137	Dental Hygiene.....	1

COURSES IN PUBLIC HEALTH ENGINEERING AND SANITATION

P.M.&P.H. A4	Rural Sanitation.....	3
P.M.&P.H. 102	Environmental Sanitation I.....	3
P.M.&P.H. 112	Water Supply Sanitation.....	4
P.M.&P.H. 113	Sewage, Excreta, and Waste Disposal.....	4
P.M.&P.H. 115	Food Sanitation.....	3
P.M.&P.H. 116	Public Health Engineering Administration.....	2
P.M.&P.H. 117	Sanitary Biology.....	2
P.M.&P.H. 118	Environmental Sanitation II.....	2
P.M.&P.H. 119	Field Practice in Environmental Sanitation.....	Ar

COURSES IN PUBLIC HEALTH NURSING

No.	Title	Credits
P.M.&P.H. 54	Principles of Public Health Nursing for Nursing School Personnel.....	3
P.M.&P.H. 55	Nursing and Social Problems in the Control of Gonorrhoea and Syphilis	2
P.M.&P.H. 62-63	Principles of Public Health Nursing.....	6
P.M.&P.H. 65	Field Work in School Nursing.....	Ar
P.M.&P.H. 66	Field Work in Rural Nursing.....	Ar
P.M.&P.H. 67	Field Work with Family Health Agency.....	Ar
P.M.&P.H. 68	Field Work in Orthopedic Nursing.....	Ar
P.M.&P.H. 69	School Nursing.....	2
P.M.&P.H. 70	Special Methods and Supervised Practice in Health Education for Public Health Nurses.....	6
P.M.&P.H. 71	Functional Anatomy.....	4
P.M.&P.H. 72	Orthopedic Nursing.....	5
P.M.&P.H. 76	Nutrition in Public Health Nursing.....	3
P.M.&P.H. 133	Mental Hygiene Aspects of Public Health Nursing.....	3
P.M.&P.H. 170	Supervision in Public Health Nursing.....	3
P.M.&P.H. 171	Problems in Public Health Nursing.....	Ar
P.M.&P.H. 173	Field Work in Supervision.....	Ar

COURSES IN PERSONAL HEALTH AND HEALTH EDUCATION

P.M.&P.H. A1	Hygiene.....	1
P.M.&P.H. A2	First Aid.....	1
P.M.&P.H. A3	Family Care.....	3
P.M.&P.H. A5	Home Nursing.....	3
P.M.&P.H. 2	First Aid.....	1
P.M.&P.H. 3	Personal Health.....	2
P.M.&P.H. 4	Health Problems of Adult Life.....	2
P.M.&P.H. 50	Public and Personal Health.....	3
P.M.&P.H. 51	Community Hygiene.....	3
P.M.&P.H. 52	Health Care of the Family.....	3
P.M.&P.H. 56	First Aid and Safety for Nurses.....	3
P.M.&P.H. 57	Health of Infant and Preschool Child.....	2
P.M.&P.H. 59	Health of the School Child.....	3
P.M.&P.H. 60	Tuberculosis and Its Control.....	2
P.M.&P.H. 81	Introduction to Health Education.....	3
P.M.&P.H. 125	Community Health Education.....	3

COURSES IN BIOSTATISTICS

P.M.&P.H. 90	Measurement in Medicine.....	2
P.M.&P.H. 110	Biometric Principles.....	3
P.M.&P.H. 111	Biostatistics Laboratory.....	2
P.M.&P.H. 120	Correlation Analysis.....	3
P.M.&P.H. 121	Correlation Analysis Laboratory.....	2
P.M.&P.H. 130	Statistical Inference.....	3
P.M.&P.H. 131	Sampling Laboratory.....	2
P.M.&P.H. 140	Topics in Biostatistics.....	Ar
P.M.&P.H. 150	Vital Statistics.....	3

DESCRIPTION OF COURSES

EXPLANATIONS

Course numbering.—A course is designated by a department name, a number, and a letter. It has the same number in whatever quarter it is offered. The quarter is indicated by letter (f, fall; w, winter; s, spring; su, summer).

Examples:

- 1f-2w, a two-quarter course given in the fall and winter.
- 1w-2s, the same course given in the winter and spring.
- 3f,w,s a one-quarter course given each quarter.

Room schedules will be posted on the Public Health bulletin board in 121 Millard Hall.

ABBREVIATIONS AND SYMBOLS

- I, II, III, etc. Main campus, first hour (8:30 to 9:20), second hour (9:30 to 10:20), third hour (10:30 to 11:20), fourth hour (11:30 to 12:20), fifth hour (12:30 to 1:20), sixth hour (1:30 to 2:20), seventh hour (2:30 to 3:20), eighth hour (3:30 to 4:20), ninth hour (4:30 to 5:20).
- Ar. To be arranged or assigned.
- Cred. Credits.
- Lab. Laboratory.
- Lect. Lecture.
- MTWThFS Monday, Tuesday, etc.
- Prereq. Prerequisite.
- Rec. Recitation.
- Sec. Section.

A parenthetical statement after the title of each course gives the following information: the number of credits the course carries, the classes to whom it is open, and the courses prerequisite to it. *Abbreviated statement:* (5 cred.; jr., sr.; prereq. 6). *Expanded statement:* This course carries five credits, is open to juniors and seniors only, and has for a prerequisite, Course 6 in the same department.

SUBCOLLEGIATE COURSES IN SCHOOL OF AGRICULTURE

- A1. Hygiene. Methods of promotion of health and prevention of disease; fundamentals of healthful living; individual and community activities against the spread of disease (1 cred.)

(Fall)	Ar	Ar	Dr. Weaver
(Winter)	Ar	Ar	Dr. Weaver
- A2. First Aid. Emergency care of accidents and injuries. Lectures and demonstrations (1 cred.)

(Winter)	VIII-IX	F 01MeH(UF)	Dr. Kernan
----------	---------	-------------	------------
- A3. Family Care. Hygiene of infancy, childhood, and womanhood; care of illness in the home (3 cred.)

(Winter)	VIII-IX	TTh 313HE	Dr. Todd,
	VI	F 01MeH	Miss Palmer
		(UF)	

- A4. Rural Sanitation. Disposal of excreta, sewage, and other waste; location, construction, and operation of rural water supplies; sanitary production, handling, processing, and serving of food; control of animals and insects involved in the spread of disease; ventilation and air conditioning; farm and home safety (3 cred.)
(Fall) IV TThS Mr. Pierce
- A5. Home Nursing. The place of the home nurse in the family and community. Further discussion and demonstration of underlying principles and procedures used by the home nurse. Laboratory sessions for practice. Prereq. A3.
(Winter) VI-VII TTh 01MeH(UF)
Miss Palmer

PREVENTIVE MEDICINE AND PUBLIC HEALTH

- 2s. First Aid. General care and observation of patients. Emergencies and first aid treatment. Laboratory demonstrations and practice. (1 cred.; no prereq.)
VI, VII W 01MeH(UF)
Dr. Kernan
- 3f,w,s.* Personal Health. Elementary principles of normal body function; predisposing and actual causes of disease; ways in which disease may be avoided. (2 cred.; fr., soph.; no prereq. Not open to students who have taken Human Biology (G.C.10C.) in the General College.)
(Fall) VI MW BuAud Dr. O'Brien
(Winter) VI WF BuAud Dr. O'Brien
(Spring) VI MW BuAud Dr. O'Brien
- 4w,s.* Health Problems of Adult Life. Personal health and prevention of disease in the family; relation to community health and disease control, important diseases and their prevention. (2 cred.; prereq. 3. Not open to students who have taken Human Biology (G.C.10C.) in the General College.) VI TTh. Dr. Potthoff.
- 50f,s.* Public and Personal Health. Causes of diseases and of physical defects; fundamental principles and working methods of health conservation and disease prevention. Lectures, discussions, and directed readings. (3 cred.; open to students who have not taken Course 3, 4, 52, or Human Biology (G.C.10C.) in the General College; no prereq.)
(Fall) VII MWF Ar Dr. Boehrer
(Spring) IV MWF Ar Dr. Boehrer
- 51f,s.* Community Hygiene. Elementary concepts of development, spread, and prevention of preventable diseases; community programs for their control. (3 cred.; jr., sr.; prereq. 3, or Human Biology (G.C.10C.) in the General College; not open to students who have taken 4, 50, 52, or 53.)
(Fall) VII MWF Ar Dr. Cowan
(Spring) IV MWF Ar Dr. Cowan
- 52w,s.* Health Care of the Family. Factors affecting the health of the family as a unit; environmental factors, including elementary sanitation; prevention of accidents; communicable diseases, their transmission and prevention; prenatal and infant hygiene and care; principal problems in preschool and school hygiene; care of the sick room; observation and care of the patient; elementary symptomatology. For home economics students. (3 cred.; jr., sr.; prereq. Bact. 53, Human Physiol 4. Not open to students who have taken 50 or 51.)
Lect. VI MW 313HE and
Lab. Sec. 1 VI-VII F 01MeH(UF)
2 VII-VIII M Dr. Todd,
3 VII-VIII W Miss Palmer

* No credit granted for this course in major sequence in public health nursing.

53f.† Elements of Preventive Medicine and Public Health. Susceptibility and resistance to disease; occurrence and prevention of communicable, degenerative, and industrial diseases; protection of food, water, and milk; school health work; vital statistics. (5 cred.; nurses and students in med. soc. work; prereq. 3 or 50, or equiv. and a course in Bacteriology.)

Lect.	II	MWF	Ar	Dr. Anderson,
Rec. Sec. 1	III	TTh	Ar	Mrs. Harris
2	VI	TTh		

54. Principles of Public Health Nursing for Nursing School Personnel. Health teaching in the various services of a public health program with particular emphasis on the public health nurse's part in each phase of the program (morbidity, maternity, infancy, preschool, school, and adult health problems; communicable disease, tuberculosis, venereal disease, orthopedic problems; and accident prevention). Brief consideration of the organization and administration of public health nursing programs. (3 cred.) Not offered 1942-43 except in Extension. Mrs. Harris.

55s. Nursing and Social Problems in the Control of Gonorrhea and Syphilis. History, prevalence, and epidemiology of gonorrhea and syphilis, public health control measures; individual and family problems resulting from these diseases. Provision will be made for conferences and case discussion. (2 cred.; prereq. 53 and 62; Soc. 90 or 109 may be substituted by medical social work students; may be taken simultaneously with any of these prerequisites.) II TTh. Miss Freeman.

56s. First Aid and Safety for Nurses. Principles of first aid in home, industry, and community; prevention of accidents; organization of community programs in first aid and safety; professional and legal responsibilities of nurses in administering first aid. (3 cred.; nurses only.) VI, VII, VIII, TTh. Dr. Weaver.

57w.* Health of Infant and Preschool Child. Maternal and child health in public health program, problems of infant and maternal mortality, growth and development of infant and young child, care and feeding of normal infant; prevention and correction of physical defects. (2 cred.; jr., sr.; prereq. 4, 50, 51, 52 or 53.) II MF. Dr. Boynton.

58w. Maternal and Child Hygiene. The maternal welfare program; importance of breast feeding; conduct of infant welfare clinics in cities and rural communities; consideration of child of preschool and school age as to malnutrition, physical defects, cardiac and nervous disorders. (3 cred.; nurses; prereq. 53 and 62.) II MF and one hr. ar. Dr. Boynton.

59s.§ Health of the School Child. Mental and physical growth; discovery of physical defects; exercise, fatigue, emotional problems; health habits; diseases of school children; practical problems of health supervision and health instruction. (3 cred.; prereq. 4, 50, 51, 52 or 53; will be waived for teachers and school nurses, but cred. granted only after completion of prereq.) II MWF. Dr. Ellis.

60f.s. Tuberculosis and Its Control. History of tuberculosis movement and campaign in the United States; early diagnosis and sanatorium treatment; tuberculosis in children; psychology of tuberculosis; supervision of returned sanatoria patients; state program for eradication of tuberculosis; legislation. (2 cred.; nurses, others admitted by special permission; prereq. 4, 50, 51, 52 or 53, and 62.) IV TS. Dr. Myers.

* No credit granted for this course in major sequence in public health nursing curriculum.

† During 1942-43 will also be given in winter and spring quarters if sufficient demand exists; hours to be arranged.

§ Students cannot receive credit for both Courses 59 and 69.

62f-63w.*¶ Principles of Public Health Nursing. The public health nurse's role in the various services of a public health program; discussion of individual, family, and community health problems; teaching in the home, principles of organization and administration of public health nursing services including planning of the program; some discussion of special services such as school and industrial nursing. (3 cred. per qtr.; nurses only; jr., sr.)

Sec. 1§
2§

IV
VI

MWF Ar
MWF Ar

Mrs. Harris
Miss Freeman

65f,ws.‡ Field Work in School Nursing.† Credits allowed according to experience in this field. Working with the school nurse the student observes and participates in the activities included in the school nursing program; special attention to organization, relationships, techniques, methods of informal health teaching, provision for handicapped children, and home visiting. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53, 62, and 67.) Miss Freeman and associates.

66f,w,s.‡ Field Work in Rural Nursing.† Credits allowed according to experience in this field. The student accompanies the rural nurse on her rounds and observes and participates in the activities in a rural nursing program. Special attention to organization for rural health work, methods of health teaching, development of community leadership, planning and conducting classes of various types for differing age groups, home visiting, etc. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53, 62, and 67.) Miss Freeman and associates.

67f,w,s,su.‡ Field Work with Family Health Agency.† Credits allowed according to experience in this field. Lectures, demonstrations, and supervised experience in prenatal and infant clinics and in home visiting. This includes bedside care of all types of cases, with emphasis on promotion of physical and mental health and recognition of social problems. (Cred. ar.; public health nurses only; jr., sr.; prereq. 53, 62.) Miss Draper, Miss Palmer, Mrs. Lyons, Mrs. McKinnon, Miss Shalit, Miss Taylor.

68.‡ Field Work in Orthopedic Nursing. Practical experience with cases of orthopedic defects at Gillette State Hospital for Crippled Children, Curative Workshop of Minneapolis, and field clinics for crippled children of Minnesota Department of Social Security. (Cred. ar.; by permission; public health nurses only.) Miss Harrison and associates.

69s.** School Nursing. Development, organization, and scope of programs; relationship of school nursing to general public health program, to health education in schools, and to school curriculum. (2 cred.; prereq. 53, and 62, 63, and some field experience, but may be taken simultaneously with 63.) I TTh. Miss Palmer.

70w,s.‡‡ Special Methods and Supervised Teaching in Health Education for Public Health Nurses. (Same as Ed.T.50.) Includes practice in planning instruction and in teaching adults. (6 cred.; jr., sr.; prereq. P.M.&P.H. 65, 66, 67, 81, and permission of instructor.) (Enrolment limited.) Ar. Miss Palmer.

* To receive credit for any part of this course the student must complete both parts.

† Students must maintain a C average in theory completed before they are admitted to any field work.

‡ A fee of \$3 is charged for this course.

‡‡ A fee of \$1 per credit is charged for this course.

§ Section 1 is for students who have not had practical experience in public health nursing; section 2 is for students who have had such experience.

¶ During 1942-43 will also be given in winter and spring quarters if sufficient demand exists; hours to be arranged.

** Students cannot receive credit for both Courses 59 and 69.

- 71w. Functional Anatomy. Anatomy of muscles, bones, and joints as related to public health orthopedic nursing duties. (4 cred.) Ar. Dr. Pohl.
- 72w. Orthopedic Nursing. Nursing procedures in the home care and correction of orthopedic defects. (5 cred.) Ar. Miss Harrison.
- 76f. Nutrition in Public Health Nursing. (Same as H.E. 76.) Principles of nutrition applied to family teaching, consideration of diet for normal living, at special periods in life, and for certain diseases. Discussion of diet problems of low income groups. (3 cred.; prereq. 62 or may be taken concurrently.) III TThS. Miss Donelson.
- 81f. Introduction to Health Education. Elementary principles of preparation and presentation of health educational material. (3 cred.; public health nurses; prereq. P.M.&P.H. 53 and 62 or to be taken concurrently; experience in public health nursing desirable.) II TThS. Miss Grout.
- 90w. Measurement in Medicine. Consideration of quantitative as opposed to qualitative methods of description; some elements of statistical analysis, particularly as they pertain to vital statistics. (2 cred.; medical students only.) Mr. Treloar.
- 100w,s. Preventive Medicine. Environmental and biologic factors concerned in the maintenance and transmission of disease, and the possibilities of control or prevention through the efforts of the private physician alone or in collaboration with community, state, or federal agencies. (4 cred.; sophomore medical students only.) Dr. Anderson.
- 101f,w,s,su. Public Health Administration and Field Work. A series of field trips to acquaint the student with the activities of the State Board of Health and with problems of water filtration, sewage disposal, and milk sanitation. (2 cred.; senior medical students only.) Dr. Anderson.
- 102f.§ Environmental Sanitation I. Methods for promoting man's health and comfort by controlling his environment; water supply sanitation, food sanitation, pollution abatement; sewage, excreta, and waste disposal; bathing place sanitation, air hygiene, illumination, housing, control of insect and animal vectors of disease, industrial hygiene and sanitation. (3 cred.; sr., grad.; prereq. 50 or 51 or 53 or 100 or by permission or may be taken concurrently with any of these.) I MWF. Mr. Pierce., Mr. Olson.
- 103f,w,s. Public Health Bacteriology. Bacteriologic and serologic diagnosis, public health laboratory administration and methods. (Cred. ar.; grad.; prereq. Bact. 101-102, 116 and permission of instructor.) Dr. Heathman.
- 104f.† Epidemiology I. Factors underlying the spread of infectious diseases, with detailed discussion of selected diseases; simple statistical and epidemiologic methods in the study of diseases. Lectures and laboratory. (5 cred.; jr., sr., grad.; prereq. 53 or 100 and consent of instructor; physicians, others by permission.) I TThS and IV TS. Dr. Anderson, Dr. Diehl, Mr. Treloar.
- 105w.† Epidemiology II. Epidemiology of intestinal and insect-borne infections; further statistical methods. (3 cred.; prereq. 104.) III TThS. Dr. Anderson, Mr. Treloar.
- 106w.† Public Health Administration. Structure, basic functions, and activities of public health agencies; public health laws and regulations; administrative procedures in public health practice; relationship to other governmental and social activities.

† During 1942-43 Courses 104, 105, 106, 107, and 109 will also be given during the spring, fall, and winter quarters, respectively, Course 106 in the fall quarter, and Course 107 in the spring quarter, if sufficient demand exists; hours to be arranged.

§ During 1942-43 will also be given in winter quarter if sufficient demand exists; hours to be arranged.

- (3 cred.; physicians, engineers, nurses, social workers, and others by arrangement; prereq. 53, 100, 109, or equiv. or to be taken simultaneously with any of these prereq.)
I TThS. Dr. Anderson.
- 107f.† Child and Adult Hygiene. Promotion of hygiene through public health and community effort, maternal, infant, preschool, school, college, industrial, and adult. Lectures and field trips. (3 cred.; physicians and graduate students in public health nursing or medical social work; prereq. 53 or 100.) II, III, IV MF. Dr. Boynton, Dr. Ellis, and associates.
- 108w. Care of the Handicapped Child. Extent of problem; history and development of program for care; types of physical defects; means of prevention and correction; medical social aspects; mental and emotional aspects; vocational training and placement. (2 cred.; prereq. 53, 57, 58, or 100.) I MW. Ar.
- 109s.† Epidemiology III. Further consideration of selected diseases, with statistical applications. (3 cred.; prereq. 104 and 105 or permission of instructor.) Hrs. ar. Dr. Anderson, Mr. Treloar.
- 110f,s. Biometric Principles. Introduction to statistical analysis with emphasis on basic principles of statistical reasoning. The description of univariate distributions, normal correlations, simple tests of significance, and goodness of fit. (3 cred.; jr., sr., grad.; prereq. 18 cred. in biol. sci. or math. through anal. geom.; to be taken with 111.)
- | | | | | |
|----------|-----|------|----|-------------|
| (Fall) | III | TThS | Ar | Mr. Treloar |
| (Spring) | I | TThS | Ar | Mr. Treloar |
- 111f,s.‡ Biostatistics Laboratory. Practical training in machine calculation and statistical techniques. To be taken concurrently with Course 110. (2 cred.) Mrs. Behn.
- 112w.* Water Supply Sanitation. Sanitary problems associated with the location, construction, and operation of water supplies, purification works, and distribution systems. Public health supervision of water supplies. Lectures, field and laboratory demonstrations. (4 cred.; prereq. 102 and 104.) I MWF, VI-IX Th. Mr. Pierce, Mr. Olson.
- 113w.* Sewage, Excreta, and Waste Disposal. Public health supervision of, and methods for, the treatment and disposal of sewage, excreta, garbage and other wastes; methods for the study and control of stream, lake, and ground water pollution. Lectures, field and laboratory demonstrations. (4 cred.; prereq. 102 and 104.) III MWF, VI-IX T. Mr. Pierce, Mr. Olson.
- 115s. Food Sanitation. Sanitary problems associated with the production, processing and distribution of milk, meat, shellfish, and other foods, methods of public health supervision. Lectures, field and laboratory demonstrations. (3 cred.; prereq. 102, 104, 106.) III WF, VI-IX Th. Mr. Olson, Mr. Pierce.
- 116s.* Public Health Engineering Administration. Sanitary problems of urban and rural communities, administrative methods and procedures for their solution; organization of activities in the field of environmental sanitation. Lectures, seminars, field and laboratory demonstrations. (2 cred.; prereq. 102, 104, 106 and at least two of the following: 112, 113, 115.) III, V-VIII M. Mr. Whittaker, Mr. Pierce, and special lecturers.

* Students who have taken Courses 112, 113, or 116 will not be given credit for Course 118.

† During 1942-43 Courses 104, 105, 106, 107, and 109 will also be given during the spring, fall, and winter quarters, respectively, Course 106 in the fall quarter, and Course 107 in the spring quarter, if sufficient demand exists; hours to be arranged.

‡ A fee of \$1 is charged for this course.

- 117f. Sanitary Biology. Plant and animal forms of importance in water supply, sewage disposal and bathing places; biology of shellfish, rodents, mosquitoes, flies, and other organisms as it pertains to public health. Lectures and laboratory work. (2 cred.; prereq. 102 or consent of instructor) Not offered in 1942-43. Mr. Olson.
- 118w.* Environmental Sanitation II. Public health supervision of activities in the field of urban and rural sanitation. Demonstration of methods of sanitary control of environmental factors. Lectures, field and laboratory demonstrations. (2 cred.; physicians, nurses, veterinarians, and others by arrangement; prereq. 102 or may be taken concurrently.) VI-IX W. Mr. Whittaker, Mr. Olson, Mr. Pierce.
- 119f,w,s,su. Field Practice in Environmental Sanitation. Credits allowed according to experience in this field. (Cred. ar.; by permission.) Mr. Whittaker, Mr. Pierce.
- 120w. Correlation Analysis. Total, partial, and multiple correlation and regression; correlation ratio; contingency; biserial methods; tetrachoric correlation; rank-order correlation; the symmetrical table and intra-class correlation. Course 121 to be taken concurrently. (3 cred.; prereq. 110.) III TThS. Mrs. Behn.
- 121w.‡ Correlation Analysis Laboratory. Practical training in the above techniques of correlation analysis. To be taken concurrently with Course 120. (2 cred.) Mrs. Behn.
- 122s. Public Health Administration Problems. Conference discussion of selected problems; budgeting and program planning; appraisal of public health procedures and activities. (3 cred.; prereq. 106.) III MWF. Dr. Anderson.
- 123f,w,s. Topics in Public Health. Selected readings in public health with discussion based on these readings. (Cred. ar.; prereq. permission of instructor.) Dr. Anderson and associates.
- 125w. Community Health Education. Techniques of conveying health information to the public; organization of community programs. (3 cred.; 53 or 104, and 106 or to be taken concurrently with 106.) Ar. Miss Grout.
- 130s. Statistical Inference. A discussion of the sampling distributions of the more familiar statistics, and analysis of the problems of interpretation of differences, with special reference to small samples. Course 131 may be taken concurrently. (3 cred.; prereq. 110.) III TThS. Mr. Treloar.
- 131s.‡ Sampling Laboratory. Study of the distributions of statistics derived from small samples by practical test. To be taken concurrently with Course 130. (2 cred.) Mrs. Behn.
- 133w. Mental Hygiene Aspects of Public Health Nursing. (Same as Med. 133.) Discussion of emotional factors underlying wholesome family relations and of problems which interfere with successful adjustment in family and community life. Illustrative case material related to problems met by the public health nurse will be used. (3 cred.; prereq. 62 or experience.)
- | | | | | |
|-------------|--|-----|-----|-------------|
| Lect. | | II | TTh | Dr. Clarke |
| Rec. Sec. 1 | | II | S | Miss Shalit |
| 2 | | III | S | Miss Shalit |
- 135s. Conservation of Hearing. Detection, prevention, and amelioration of hearing impairments as related to public health education, school, industrial, and public health nursing, and medical social service. (1 cred.; prereq. 53 and 62 or to be taken concurrently.) I M. Dr. Boies and associates.
- 136s. Sight Conservation. Conditions that impair human vision; community programs of vision testing and correction of defects; sight conservation programs. (1 cred.; prereq. 53 and 62 or to be taken concurrently.) I W. Dr. Burch and associates.

* Students who have taken Courses 112, 113, or 116 will not be given credit for Course 118.

‡ A fee of \$1 is charged for this course.

- 137s. Dental Hygiene. Conditions resulting in tooth decay and loss; preventive and corrective measures; mouth hygiene; community programs for dental health. (1 cred.; prereq. 53 and 62 or to be taken concurrently.) I F. Dr. Johnson, Dr. Radsch.
- 140f,w,s.‡ Topics in Biostatistics. Studies in special topics for advanced students. (Cred. ar.; prereq. 120, 130, or consent of instructor.) Mr. Treloar.
- 150w.‡ Vital Statistics. Mortality rates and the construction of the life table. Laboratory course with discussions, offered when sufficient demand exists. (3 cred.; prereq. permission of instructor.) Mr. Treloar.
- 170s. Supervision in Public Health Nursing. Nature of supervision, classification of activities; methods of supervision, including field visitation, individual counseling, group conferences, staff education programs, administrative functions of supervisors, preparation and selection of supervisors. (3 cred.; prereq. 53, 61, 63 and experience in public health nursing, or by permission.) III TThS. Miss Freeman.
- 171f,w,s. Problems in Public Health Nursing. For advanced students who wish to work on special problems in public health nursing. (Cred. ar.; prereq. 170 or permission of instructor.) Miss Freeman and associates.
- 173f,w,s.‡‡ Field Work in Supervision. (Cred. ar.; public health nurses only; prereq. 170 or permission of instructor.)
- 200f,w,s. Research. Opportunities will be offered by the University and by the various co-ordinated organizations for qualified students to pursue research work. Ar. Dr. Anderson, Dr. Diehl, and others.
- 210f,w,s. Seminar in Preventive Medicine and Public Health. 4:00 p.m. M. Staff.

‡ A fee of \$1 is charged for this course.

‡‡ A fee of \$3 is charged for this course.

GENERAL INFORMATION FOR ALL STUDENTS

EXPENSES

1. Tuition fee per quarter*
 - Resident (full schedule)..... \$25.00
 - Nonresident (full schedule)..... 50.00
 - Resident, per credit hour..... 2.25
 - Nonresident, per credit hour..... 4.50
2. Matriculation deposit*
 - For Graduate School..... 3.00
 - For others‡ 10.00
3. Incidental fee per quarter*..... 9.00
4. Special course fees are charged in addition to the regular tuition.

UNIVERSITY FEES

The university year, extending from October to June, is divided into three terms called quarters. On the specified dates (see Calendar, pages 2-3) prior to the opening of each quarter, the following fees are due from each student: (a) tuition, (b) incidental, and (c) such special fees and deposits as may be required.

Payment of fees cannot be deferred. Special attention is called to the paragraph on Privilege Fees (Bulletin of General Information, p. 46) for further instruction on late registration and late payment of fees.

Checks and drafts received in payment of any fee whatsoever are accepted subject to final payment in cash or solvent credits; and all banks in the banking routine of collection of such items are accepted by the student as his own agents, and not those of the University, whether such items be sent directly or indirectly to the payer bank.

RESIDENCE DORMITORIES

For women.—Comstock Hall on the Mississippi River Road houses 278 girls and Sanford Hall at 1100 University Avenue Southeast accommodates 250. The charge for board and single room is from \$100 to \$140 per quarter; for occupants of double rooms, \$95 to \$140 per quarter. All applications for residence must be made for the entire school year. Communications requesting residence or regarding prices or any other details should be addressed to the director of the residence halls for women.

Co-operative cottages, each in charge of a chaperone, offer comfortable homes for about 115 women. By assisting with the work of the houses, the students are able to keep expenses under \$25 a month. Applications may be made to the manager of university cottages, Shevlin Hall.

* If a student receives a stipend under the terms of the Social Security Act the university director of admissions and records should receive official authorization from the State Department of Health as to the payment of university fees before time of registration. The tuition amounts indicated are for registration in the College of Science, Literature, and the Arts, the College of Education, the Graduate School, and for the Course in Public Health Nursing and for candidates for the degree of master of public health in the Medical School. For tuition rates for other colleges the Bulletin of General Information should be consulted.

‡ If student is registered for less than 5 credits the matriculation deposit is \$5.

For men.—Pioneer Hall, a residence hall of 16 houses on East River Road, one block east of the medical buildings, accommodates 536 men. Board and room are provided at rates from \$110 per quarter in a double room to \$135 per quarter in a bay window three-room suite for two men—a study and two bedrooms.

ROOMING HOUSES

Room and board may be secured in approved rooming houses accommodating either men or women. Room rent varies from \$15 to \$18 per month for a single room, and from \$12 to \$15 per month for a double room. Board at present prices may be secured \$6 to \$7 per week for two meals per day. For lists of approved rooming houses consult the Housing Bureau, 118 Administration Building.

FURTHER INFORMATION

For further details regarding admission, expenses, health service, scholarships, etc., consult the Bulletin of General Information which may be obtained upon request. Address Director of Admissions and Records, University of Minnesota, Minneapolis, Minn.

The Bulletin of the
UNIVERSITY of MINNESOTA

The College of Science, Literature, and the Arts
1942-1943



Volume XLV, Number 42

June 30, 1942

*Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota.
Accepted for mailing at special rate of postage provided for in Section 1103, Act of
October 3, 1917, authorized July 12, 1918*

ADMINISTRATION

The administrative officers of the College of Science, Literature, and the Arts are:

John T. Tate, Ph.D., D.Sc., Dean (219 Administration Bldg.)

T. Raymond McConnell, Ph.D., Associate Dean (219 Administration Bldg.)

Joseph M. Thomas, Ph.D., Assistant Dean for the Senior College (217 Folwell Hall)

William H. Bussey, Ph.D., Assistant Dean for the Junior College (106 Folwell Hall)

Royal R. Shumway, B.A., Assistant Dean for Students' Work and Chairman of the Students' Work Committee (219 Administration Bldg.)

The Students' Work Committee consists of the three assistant deans.

GENERAL INFORMATION

1. **Junior and Senior Colleges.**—The College of Science, Literature, and the Arts is divided into a *Junior College*, in which students get their first two years of college work, and a *Senior College* in which they get their third and fourth years of work if they are candidates for the degree of bachelor of arts or bachelor of science given by the college.

The *Junior College* offers a two-year course leading to the degree of associate in liberal arts; and courses of study leading to the Senior College and to the professional schools which require preliminary academic college work.

The *Senior College* is concerned primarily with advanced instruction leading to the degrees of bachelor of arts and bachelor of science.

2. **Courses of study.**—The courses of study offered to students of this college are summarized on pages 8-9 and are described on pages 20-53. "Studies for Freshmen" are listed on pages 10-19.

3. **Admission.**—This college admits those students who have met the admission requirements as published in the University's Bulletin of General Information and who give reasonable promise of carrying successfully the courses of study offered in this college. The case of each individual applicant will be decided on the evidence of his previous record either in secondary school or college, or his performance in such aptitude and placement tests as are found reliable for this purpose, and comments, advice, or recommendations received from teachers or officials of the institutions previously attended. In the case of students transferring from other collegiate institutions, corresponding information will be taken into account in determining their status in this college.

4. **Admission to the freshman year.**—Students are admitted to this college either by certificate from an accredited secondary school or by examination. For details concerning the requirements in either case consult the Bulletin of General Information for 1942-43, pages 10-12.

NOTE.—The method of admission by examination is especially recommended to high school graduates who have shown superior ability in their high school work but who cannot present the proper units for admission by certificate. Entrance tests given by the University are of the objective type, intended to measure aptitudes for college work rather than specific information in high school fields. No special preparation for the tests is practicable.

5. **Adult special students.**—Persons of maturity (at least 24 years of age) who desire to pursue a special and limited course of study may be admitted by the Students' Work Committee as adult special students. The registration of such students will be under the control of the committee.

Application for registration as an adult special student should be made not later than September 15, December 15, or March 15, depending upon the quarter the candidate desires to enter the college.

6. **Admission to advanced standing.**—The following rules govern students entering this college with advanced standing from other institutions.

- a. A student entering with advanced standing must earn an average of one honor point per credit for all work in this college counted for admission to the Senior College or for the degree of bachelor of arts or bachelor of science.
- b. A student admitted to the Senior College and failing to meet this requirement may be excluded from the Senior College at any time after the first quarter.

7. **Examinations for advanced standing.**—Any student upon first registration at the University may, with the approval of the Students' Work Committee, be allowed without charge to take examinations for advanced standing in subjects in which the student declares himself to be prepared. Such examinations must be taken within the first six weeks of residence.

8. **Examinations for credit.**—Credit for work done outside of class may be obtained by taking a special examination. Applications should be made to the assistant dean for students' work. If approved, such an examination will be given by a committee appointed by the assistant dean for students' work. Unless the Students' Work Committee directs otherwise, the fee for such an examination will be five dollars.

9. **Examinations to demonstrate proficiency in prerequisite courses.**—Any student who wishes to carry a course for which he does not have the prerequisite may apply to the assistant dean for students' work for permission to take an examination to demonstrate his proficiency in the prerequisite. A satisfactory showing in the examination will admit the student to the course but will not entitle him to credit in the prerequisite course. There is no fee for this examination.

10. **Credits, grades, and honor points** are used for convenience in indicating amount and quality of work.

11. Four grades, A, B, C, and D, are given for work of varying degrees of merit. The grade D permits a student to register for continuation or dependent courses; and work completed with this grade is counted toward graduation when combined with work of A or B grade in other courses. The grade C indicates work of the quality required for graduation in most curricula; the grades B and A are given for work of higher degrees of excellence.

Work of inferior grade is marked E (condition) or F (failure). Work which is of at least D grade but, because of circumstances beyond the student's control, not completed, may be marked I (incomplete).

12. Amount of work is expressed in *credits*. Each credit demands on the average three hours a week of a student's time; that is, one recitation with two hours of preparation, or three hours of laboratory work.

13. Quality of work is indicated by *honor points*. Honor points are assigned to the various grades on the assumption that work of a quality required for graduation in most curricula is graded at least C. (See paragraph 11.) Each credit with the grade of C carries one honor point; each credit with the grade of B, two honor points; each credit with the grade of A, three honor points. The grade of D carries no honor points. The grade of F carries minus one honor point per credit. The penalty cannot be removed by repeating the course with a passing grade.

For satisfactory progress in most of the courses of study offered in this college, a student must maintain an average of one honor point per credit. By maintaining an average better than C, he may be able to reduce the amount of work which he is required to complete. (See paragraphs 30-32, Quality Credits.)

14. The *grade I (incomplete)* cannot be given when the work not completed represents more than one fourth of the quarter's work.

15. An *incomplete* not removed before the end of the first month of the student's next quarter in college becomes a *condition*. The Students' Work Committee may, in special cases, extend this time limit.

16. The *grade E (condition)* is a temporary grade, representing a deficiency which may be removed without repeating the course. A student who has received a condition in a course may register for the continuation or dependent course the following quarter.

17. **Removal of conditions.**—Conditions may be removed by additional work and an examination or, in certain cases, by satisfactory work in the next quarter of the course.

18. In Classics, Geology, History, Journalism, Music, Physical Education for Women, Physics, Scandinavian, Speech, and Zoology, conditions may sometimes be removed by passing a continuation course with a grade of C or better, in which case the grade of the first quarter will be recorded as D. A student who desires to remove a condition in this way must obtain the approval of the department, and most notify the office of admissions and records of his intention within the first week of the quarter. No student who has already failed in the condition examination is permitted to remove the condition by this second method.

19. In the following departments, conditions may be removed only by examination: Anthropology, Architecture, Astronomy, Bacteriology, Botany, Chemistry, Child Welfare, Drawing and Descriptive Geometry, Economics, English, Fine Arts, Geography, German, Home Economics, How To Study, Human Anatomy, Library Instruction, Mathematics, Military Science and Tactics, Natural Science, Naval Science and Tactics, Philosophy, Physical Education for Men, Physiology, Political Science, Preventive Medicine and Public Health, Psychology, Romance Languages, Russian, Social Science, Sociology and Social Work, and Vocational Orientation.

20. The permanent grade resulting from the removal of a condition may in no case be higher than C.

21. Examinations for the removal of conditions incurred during the fall and winter quarters are given during the first thirty days of the succeeding quarter. Examinations for the removal of conditions incurred during the spring quarter are given the week before the opening of the fall quarter.

22. A student who desires to remove a condition by examination should get from the office of admissions and records a pamphlet entitled *Condition Examination Schedule* and should follow the instructions contained therein.

23. A condition not made up within one quarter of residence becomes a failure subject to the rules governing failures.

24. The *grade F (failure)* represents a deficiency so serious that the student must repeat the course in order to obtain credit therein.

25. A student receiving a failure in any course shall not be allowed to pursue the continuation of that course the following quarter.

26. No course for which a student has received credit may be repeated by him to raise his grade except by special permission of the Students' Work Committee.

27. **Junior and Senior College courses.**—The college distinguishes between Junior College courses, intended primarily for freshmen and sophomores, and Senior College courses, intended primarily for juniors and seniors.*

28. Senior College courses appear in the announcements, in the University's *Combined Class Schedule*, as open to "juniors and seniors" or to "juniors, seniors, and graduates."

* Junior College students are listed as freshmen when they have less than 39 credits, as sophomores when they have 39 credits or more. Senior College students are listed as juniors when they have less than 135 credits, as seniors when they have 135 credits or more.

29. Some Senior College courses are regularly open to Junior College students who have an average grade of at least C in the prerequisite courses. They are listed under the heading *Senior College Courses* in departmental statements in the Science, Literature, and the Arts section of the University's *Combined Class Schedule*. Other Senior College courses are open to Junior College students only by special permission of the Students' Work Committee. Requests for the special permission should be presented to Assistant Dean Bussey in 106 Folwell Hall. Courses which carry graduate credit may not be taken earlier than the third quarter of the student's sophomore year.

30. **Quality credits.**—In some curricula and parts of curricula, the number of credits required of a student may be reduced as follows: For each five honor points in excess of one honor point per credit, the required number of credits will be diminished by one; or, in other words, for each five honor points in excess of one honor point per credit, a student will be given one "quality credit."

31. This regulation applies only to the total number of credits required. It does not apply to other specific requirements of the student's curriculum. It is in force as regards

- a. Admission to the Senior College, the College of Education, the School of Business Administration, the School of Dentistry, and the Course in Medical Technology.
- b. The Senior College part (exclusive of courses given by the Division of Library Instruction) of any course of study, given entirely within this college, leading to the degree of bachelor of arts or bachelor of science with this restriction: To a student registered in the Senior College, quality credits will be given for excess points earned in Senior College courses but not for those earned in Junior College courses.
- c. The Senior College part of the work done in this college in the combined courses in Arts and Law and Arts and Dentistry, with the restriction stated in the preceding paragraph (b).

32. This regulation is based on the well-known fact that students of high scholarship have accomplished more than those who have poorer records. Students of higher attainment are thus given the opportunity of completing the work for the B.A. degree in less than four years and entering earlier on their graduate work. Juniors and seniors with high scholastic standing are allowed the privilege of visiting classes[§] and of reading under direction; and students who are handicapped by outside work or poor health can thus carry less than full work and still make a normal advance toward graduation.

33. **Residence requirement for a degree.**—The student must earn at least 45 credits in residence in the University. If the term of residence is only one year, that year must be the final year; and in any case he must spend two quarters of the final year in residence. If he is a candidate for the degree of bachelor of arts or bachelor of science, he must earn a minimum of 45 credits in residence in the Senior College.

34. **Election of subjects in other colleges or schools.**—In the senior year, any student registered in the College of Science, Literature, and the Arts may elect not to exceed 6 credits per quarter in any other college or school of this University, provided that (1) the courses are indicated by the dean of the college or school in question and approved by the Advisory Committee of this college as suitable for such election; and (2) no duplication of subject occurs. Courses so taken are counted toward the bachelor of arts degree on the same terms as those taken in the College of Science, Literature, and the Arts.

By resolution of the Board of Regents students in any college electing work in any other college must complete the work so elected before they are allowed to come up for the degree for which they are candidates.

[§] See paragraphs 40-43 on page 6.

Seniors desiring further information regarding courses open should consult the assistant dean for the Senior College.

35. **Registration.**—Students are required to register on the days announced in the university calendar. Only in very exceptional circumstances will a student be allowed to register thereafter, and no student will be enrolled after the first week of the quarter. (See paragraph 46, Privilege Fees.)

36. No student will receive credit for work for which he is not properly registered.

37. **Amount of work.**—Students must elect at least 13 credits of work a quarter. To take less than that number, a student must secure permission from the Students' Work Committee.

38. The maximum number of credits for which a student may register is ordinarily 17. After two quarters of residence a student may register for 18 credits provided he has an average of $1\frac{1}{2}$ honor points per credit for the two quarters *previous to the time of registration*, and no condition or failure for the quarter immediately preceding registration.

39. If a student is in any doubt regarding his registration or desires to make any change in it, he should consult his major adviser, the assistant dean of his college, or the chairman of the Students' Work Committee.

40. **Auditors.**—Under certain conditions stated below students may be enrolled as auditors and may hear lectures and class discussions regularly without being required to do the work of the course. No regular student may be admitted to classes as an auditor until his junior year.

41. Any mature person not a regular student may be admitted as an auditor to any course under the following regulations:

- a. He shall get an auditor's card at the office of the dean of the college (219 Administration Building) and on it secure the written approval of the instructor in charge of the course, and of the dean.
- b. He shall present such approval to the recorder and pay the usual fee charged for regular membership in such a course. See paragraph 45.

42. Attendance as an auditor does not entitle one to credit or to admission to regular examinations in the course.

43. Any Senior College student may register as an auditor under the same regulations, with this understanding—that unless he has at least a B average, the courses for which he registers both as regular student and as auditor must not exceed the permissible maximum. (See paragraph 38 above.) If he has at least a B average he may register as an auditor for an additional three-credit course.

44. **Petitions.**—A student who wishes exception made to any rule of the college should present this request in writing to the Students' Work Committee. Petition blanks may be obtained at 219 Administration Building or 106 or 217 Folwell Hall.

Every student who desires to be heard in regard to his petition will be given such an opportunity by the committee.

45. **Fees.**—All university fees are subject to modification without notice.

Tuition fee (per quarter)

Residents of Minnesota	\$25.00
Nonresidents	50.00
Credit hour tuition fee (unclassified students, auditors, and others carrying less than full work)	
Residents of Minnesota	2.25
Nonresidents	4.50
Incidental fee (per quarter)	9.00

Matriculation deposit† (first quarter only).....	\$10.00
Special fees	
Fees for individual courses are specified in the course announcements (See <i>Combined Class Schedule</i>).	
Examination for removal of condition.....	1.00
Examination for credit (after first 6 weeks in residence).....	5.00
Special examination	5.00
Laboratory deposit (required of students registered for courses in chemistry)	5.00
Graduation fee	7.50
Music fees (in addition to tuition) for those electing music	
Courses 11 to 27	
1 individual lesson per week, 2 credits.....	25.00
2 individual lessons per week, 4 credits.....	50.00
Class lessons in Courses 11C, 12C, 2 credits.....	15.00
Courses A, B, C and Courses D, E, F	
1 individual lesson per week, no credit.....	25.00
Practice fees	
Organ* (per hour).....	0.20 to 0.40
Piano* (per quarter).....	5.00

46. **Privilege fees.**—The fee for the privilege of late registration or late payment of fees is \$2 through the third day of classes, on the fourth day the fee is \$2.50, and then increases 50 cents per day to a maximum of \$5. The fee for late change of registration is \$2.

* Pianos and organs are available for practice purposes upon payment of practice fees charged by the Music Department.

† Such charges as may be incurred for lockers, library penalties, laboratory breakage, etc., will be deducted from the amount of this deposit and the balance will be refunded by mail upon graduation or after the beginning of the first quarter the student fails to return to the University.

SUMMARY OF COURSES

The individual subjects of study offered to students in the College of Science, Literature, and the Arts, with information about credits and prerequisites and with a schedule of hours, days, and classrooms, are given in the University's *Combined Class Schedule*. They are listed under the following departmental headings: Anatomy, Anthropology, Architecture, Art Education, Astronomy, Bacteriology, Biostatistics, Botany and Plant Pathology, Chemistry and Agricultural Biochemistry, Child Welfare, Drawing and Descriptive Geometry, Economics, Education, English, Fine Arts, French, Geography, Geology and Mineralogy, German, Greek, History, Home Economics, How To Study, Italian, Journalism, Latin, Library Methods, Linguistics and Comparative Philology, Mathematics, Military Science and Tactics, Music, Natural Science, Naval Science and Tactics, Norwegian, Philosophy, Physical Education for Men, Physical Education for Women, Physics, Physiology, Political Science, Preventive Medicine and Public Health, Psychology, Russian, Social Science, Sociology and Social Work, Spanish, Speech, Swedish, Vocational Orientation, and Zoology. The courses open to freshmen are listed on pages 10-19 of this bulletin.

The college welcomes students who have definite intellectual interests but who do not expect to graduate or to enter one of the professional schools. Such students may continue in college as long as they maintain a satisfactory standing in the studies they elect. During their Junior College years a wide variety of courses is open to them. After that period they may continue work in their fields of interest as nonclassified students under the direction of the Students' Work Committee.

A student who is a candidate for a degree may, while registered in the College of Science, Literature, and the Arts, pursue one of the following courses, described on pages 20 to 53 of this bulletin. These curricula are subject to revision by action of the faculties of the colleges concerned.

Courses given within this college:

- I. A two-year course leading to the degree of associate in liberal arts (page 20).
- II. A course leading to the degree of bachelor of arts, which includes
 1. A curriculum which provides for concentration and involves the pursuit of major and minor studies in the Senior College (pages 20-25).
 2. A curriculum in liberal arts which provides for greater breadth of training (pages 20-25).
 3. A course in preparation for Theological Training (page 25).
 4. A course in the humanities (page 25).
 5. A course with specialization in journalism (page 26).
 6. A course with specialization in Latin-American studies (page 27).
 7. A course with specialization in music (page 28).
- III. A course in library training leading to the degree of bachelor of science (page 31).
- IV. A course preliminary to graduate social work leading to the degree of bachelor of arts (page 32).
- V. Courses preparing for admission to the School of Business Administration (page 34), School of Dentistry (page 36), College of Education (page 36), the Course in Nursing Education and Public Health Nursing (page 40), the Law School (page 41), and the Course in Medical Technology (page 42).
- VI. Courses leading to the degree of bachelor of arts or bachelor of science with special training in military or naval science and tactics (page 43).

Combined arts and professional courses:

VII. A six-year course leading to the degrees of bachelor of arts and bachelor of architecture (page 47).

VIII. A six-year course leading to the degrees of bachelor of science in law and bachelor of laws (page 48).

IX. A seven-year course leading to the degrees of bachelor of arts and bachelor of laws (page 48).

X. A seven-year course leading to the degrees of bachelor of business administration and bachelor of laws (page 49).

XI. A seven-year course leading to the degrees of bachelor of arts and doctor of dental surgery (page 50).

XII. An eight-year course leading to the degrees of bachelor of science, bachelor of medicine, and doctor of medicine (page 50).

XIII. An eight-year course leading to the degrees of bachelor of arts, bachelor of medicine, and doctor of medicine (page 52).

NOTE.—A unit of the University known as University College arranges special courses of study for individual students whose intellectual interests or professional aims are not provided for by curricula offered in other colleges of the University. For further information, inquire in the office of Dean Tate, Room 143, Physics Building.

REGULATIONS APPLYING TO FRESHMAN ENGLISH

No student may register for any course in Freshman English without having taken a placement test.

On the basis of placement tests in English, students are:

Exempt from any requirement in English,

Permitted to choose between English A-B-C and Composition 4-5-6,

Assigned to Composition 4-5-6,

Advised to postpone their English until they have had a year of experience in college,

Required to make up minimum essentials‡ as a preliminary to Composition 4-5-6.

Students who are exempt from Freshman English may register, if they wish, for English A-B-C or Composition 4-5-6, or for any Junior College courses in English, composition, or speech for which English A-B-C is the prerequisite.

English A-B-C is a 15-credit course consisting of 9 credits of literature and 6 credits of composition. Composition 4-5-6 is a 9-credit course in composition. Either course satisfies the requirement in English for graduation or for admission to the Senior College. Students who have already completed one or more quarters of Freshman English in another college should consult Professor Hillhouse, 221 Folwell Hall, before registering.

Any student who receives an A in composition in Course A or B or 4 or 5 may, upon recommendation of his instructor, be exempted from any further requirement in English.

Any student who receives an A or B in Course 4 or 5 may, upon recommendation of his instructor, elect the following quarter of A-B-C.

Habitual bad English.—Any student who, either in speaking or in writing, habitually uses bad English shall be reported by his instructor to the dean with all available evidence. If the dean considers this evidence sufficient, he will require the student to take without credit such further work in composition as the chairman of the Department of English may specify.

‡ For students who have to make up these minimum essentials, the General Extension Division of the University offers a course in "Preparatory English." It is a one-quarter course for which there is a special fee of \$7.50.

STUDIES FOR FRESHMEN

The subjects of study which are offered in the freshman year to students who enter as beginning freshmen in the fall are given in the following list. § More advanced courses, for which some students will be prepared, are announced in the University's *Combined Class Schedule*. (For example, "Oral and Written French," for which a sufficient prerequisite is four years of high school French.) The letters (f,w,s) which are printed with course numbers are abbreviations for the words fall, winter, spring; they indicate the quarter in which a course is offered. Most of the courses extend throughout the year, but students may discontinue some of them at the end of the fall or winter quarter and still get credit for the parts completed. Footnotes indicated by the symbol † tell for which courses it is necessary to complete two or three quarters in order to get any credit.

ANATOMY (HUMAN)

1f—Elementary Anatomy. 3 credits; no prerequisite. This course is open to beginning freshmen, but those who enter college in the fall are advised not to take it earlier than the spring quarter of their freshman year. It has no winter quarter continuation.

ANTHROPOLOGY

40f,41w,42s—Introduction to Anthropology (40f,41w), and The Growth of Cultures (42s). (5 credits per quarter; no prerequisite.) Students may enter any quarter.

ARCHITECTURE

1f-2w-3s—Introduction to Architecture. Discussions and problems to inform prospective students about the nature of architecture as an art and a profession. 1 credit per quarter; no prerequisites; open only to students majoring in architecture.

DP-1f,w,s*†—Drawing and Painting, Grade I. Studies in graphic expression dealing with simpler composition in form and color. 6 credits, normally 2 credits per quarter; no prerequisite.

M-1f,w,s†—Modeling, Grade I. Studies in plastic expression dealing with simpler compositions. 6 credits; normally 2 credits per quarter; no prerequisite.

ART EDUCATION

The courses in Art Education are primarily for students who will major or minor in art in the College of Education. A limited number of Science, Literature, and the Arts students will be admitted but they should not register for any of them except Course 4-5-6 without first consulting the department about the nature of the work.

1f-2w-3s—Fundamental Experiences in Design. 3 credits per quarter; prerequisite, high school art.

4f-6w-8s*—Drawing from Still Life and Pose. 2 credits per quarter; no prerequisite.

14f-15w-16s—Introduction to Art Education. 3 credits per quarter; no prerequisite.

14Af-15Aw-16As—Introduction to Art Education Laboratory. 2 credits per quarter; open only to those who take 14f-15w-16s; no prerequisite.

* Students who want a beginning course in frechand drawing may choose any one of these three: Architecture DP-1; Art Education 4-6-8; Drawing 41-42-43.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ The courses which are open to students who enter in the winter or spring are given at the end of the list. For these students the choice is more limited; and because the courses are fewer, there is more likelihood of program conflicts.

ASTRONOMY

1f—Descriptive Astronomy. 5 credits; no prerequisite. The class meets four hours a week in the daytime and on one evening a week for observation with the telescope. The course has no winter continuation.

Astronomy 20, "Astronomy for Celestial Navigation" (5 credits), is offered each quarter to freshmen who have had plane trigonometry.

BOTANY

1f—General Botany. 4 credits; no prerequisite. This course may be followed in the winter and spring by laboratory courses, each for 3 credits per quarter.

Botany 10, "Minnesota Plant Life" (3 credits; no prerequisite), is open to freshmen in the spring quarter.

CHEMISTRY

Courses 1f-2w and 6f-7w are for students *who have not had* high school chemistry; Courses 4f-5w and 9f-10w are for those *who have had* high school chemistry. Courses 1f-2w and 4f-5w are primarily for pre dental, pre medical, and medical technology students. Courses 6f-7w and 9f-10w are for other students. Students in the five-year curriculum in nursing may take either 1f-2w or 6f-7w, but if they have had high school chemistry they should take 4f-5w and not 9f-10w.

1f-2w†—General Inorganic Chemistry. 4 credits per quarter; no prerequisite; primarily for pre dental, pre medical, and medical technology students. This course may be followed in the spring by 11s, "Qualitative Chemical Analysis," 4 credits.

4f-5w†—General Inorganic Chemistry. 4 credits per quarter; prerequisite, high school chemistry; primarily for pre dental, pre medical, and medical technology students. This course may be followed in the spring by 11s, "Qualitative Chemical Analysis," 4 credits.

6f-7w†—General Inorganic Chemistry. 5 credits per quarter; no prerequisite. This course may be followed in the spring by Course 12s, "Qualitative Chemical Analysis," 5 credits.

9f-10w†—General Inorganic Chemistry. 5 credits per quarter; prerequisite, high school chemistry. This course may be followed in the spring by 12s, "Qualitative Chemical Analysis," 5 credits.

CHILD WELFARE

Most of the courses in Child Welfare are for sophomores, juniors, and seniors; but there is one course, 10s, "Introduction to Child Study" (2 credits; no prerequisite), which is regularly open to third quarter freshmen.

DRAWING

41f-42w-43s*—Technical Drawing. (a) A general course in the theory and practice of freehand drawing. (b) A modification of that course of particular interest to dental, medical, and scientific students. 2 credits per quarter; no prerequisite.

44f—Lettering. 1 credit; no prerequisite. This course has no winter quarter continuation.

ECONOMICS

1f-2w-3s—Industrial History (1f), Industrial Organization and Production (2w), and Money and Banking (3s). 5 credits per quarter; no prerequisite. Students may enter any quarter. Course 3, which is open to second quarter freshmen, is also offered in the winter quarter.

* Students who want a beginning course in freehand drawing may choose any one of these three: Architecture DP-1; Art Education 4-6-8; Drawing 41-42-43.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

Economics 20, "Elements of Accounting" (3 credits; no prerequisite), is not open to beginning freshmen, but is regularly open to third quarter freshmen. Some students who enter college in the fall may find a place for it on their spring quarter programs.

Economics 32-33, "Secretarial Training: Typewriting" (1 credit per quarter), is open to a very limited number of freshmen. They may begin the course in the fall or the winter or the spring.

ENGLISH

The regular English courses for freshmen are one in composition (Course 4-5-6) and one in literature and composition (Course A-B-C). On the basis of placement tests, § some students are assigned to Course 4-5-6; others are permitted to choose between 4-5-6 and A-B-C. Students whose standing in the placement tests is very low are required to make up minimum essentials as a preliminary to Composition 4-5-6. For such students the General Extension Division of the University offers a course in Preparatory English. §
 4f-5w-6s†—Freshman Composition. 3 credits per quarter; prerequisite, placement tests. §
 Af-Bw-Cs†—Freshman English. 5 credits per quarter; prerequisite, placement tests. §

The following courses are open to freshmen who are exempt from Freshman English.

21f-22w-23s—Introduction to Literature. 5 credits per quarter; prerequisite, placement tests. § Students may enter any quarter.

27f-28w-29s—Advanced Writing. 3 credits per quarter; prerequisite, placement tests. §

To receive credit for any part of this course a student must complete 27-28 or 27-29.

37f-38w-39s—Twentieth-Century Literature. 3 credits per quarter; prerequisite, placement tests. § Students may enter any quarter.

40w-41s—The Bible As Literature. 3 credits per quarter; prerequisite, placement tests. § Students may enter any quarter.

FINE ARTS

1f-2w-3s—Introduction to Art: Modern Art, Ancient and Medieval Art, Renaissance and Baroque Art. 3 credits per quarter; no prerequisite. Students may enter any quarter.

FRENCH

1f-2w-3s—Beginning French (1f-2w) and the first part of Intermediate French (3s). 5 credits per quarter.

2f-3w-4s—The second part of Beginning French (2f) and Intermediate French (3w-4s). 5 credits per quarter; prerequisite, one year of high school French.

3f-4w—Intermediate French. 5 credits per quarter; prerequisite, two years of high school French. This course may be followed in the spring by 20s, "Oral and Written French," 5 credits.

GEOLOGY

There are three beginning courses in geology: Course 1-2 (with or without the laboratory course A-B); Course 1-3 (with or without the laboratory course A-C); Course 8, which is a one-quarter course, without laboratory, for those who do not take geology to meet a laboratory science requirement. For a 15-credit, three-quarter sequence, students may take Courses 1-2-3, A-B-C or Courses 1-3-2, A-C-B.

1f-2w†—General Geology (Dynamic and Historical). 3 credits per quarter; no prerequisite. Students who take this course are advised to take the laboratory course Af-Bw at the same time.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

§ See Regulations Applying to Freshman English, page 9.

- Af-Bw—General Geology Laboratory (Dynamic and Historical). 2 credits per quarter. This course is open only to those who take 1f-2w.
- 1w-3s†—General Geology (Dynamic and Economic). 3 credits per quarter; no prerequisite. Students who take this course are advised to take the laboratory course Aw-Cs at the same time.
- Aw-Cs—General Geology Laboratory (Dynamic and Economic). 2 credits per quarter. This course is open only to those who take 1w-3s.
- 8f—Introductory Geology. 5 credits; no prerequisite. This course has no regular winter quarter continuation, but students who take it may, with the instructor's permission, arrange to take more courses in geology.

GERMAN

- 1f-2w-3s—Beginning German. 5 credits per quarter; no prerequisite.
- 2f-3w-4s—The second and third parts of Beginning German (2f-3w) and Intermediate German (4s). 5 credits per quarter; prerequisite, one year of high school German.
- 3f-4w—The third part of Beginning German (3f) and Intermediate German (4w). 5 credits per quarter; prerequisite, two years of high school German. This course may be followed in the spring by 58s, "German Pronunciation," 2 credits, or by 60s, "Narrative Prose," 3 credits.
- 3f-33w-34s—The third part of Beginning German (3f) and Medical German (33w-34s). 5 credits per quarter. This sequence is primarily for premedical students.
- 30f-31w-32s—Medical German. 3 credits per quarter; prerequisite, three years of high school German. This course is equivalent to 33w-34s.
- 45f-46w-47s—Military and Naval German. 3 credits per quarter; prerequisite, two years of high school German.

GREEK

- 1f-2w†-3s—Beginning Greek (1f-2w) and Selections from Attic Prose (3s). 5 credits per quarter.

HISTORY

- 1f-2w-3s†—European Civilization. 4 credits per quarter; no prerequisite.
- 4f-5w-6s†—English History (England since prehistoric times). 3 credits per quarter; no prerequisite. This course is especially recommended for prelaw students.
- 11f-12w-13s†—Medieval History (300-1560). 3 credits per quarter; no prerequisite. This course is primarily for music and architecture students.
- 14f-15w-16s†—Ancient Civilization. 3 credits per quarter; no prerequisite.

History 17, "Social and Economic History of Modern Europe—Since 1500" (5 credits; no prerequisite), is open in the spring to third quarter freshmen who have not had Economics I.

HOME ECONOMICS

Courses in home economics are not usually taken by Science, Literature, and the Arts freshmen. Students who are especially interested should inquire in the Junior College office, Room 106 Folwell Hall, as to what courses they may take.

HOW TO STUDY

- 1f—How To Study. 2 credits. Registration for this course requires a preliminary conference with the instructor. Students interested should inquire in Room 106 Folwell Hall or in Room 112 Psychology Building. The course has no winter quarter continuation.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

ITALIAN

1f-2w†-3s—Beginning Italian (1f-2w) and Intermediate Italian (3s). 5 credits per quarter.

LATIN

1f-2w†-3s—Beginning Latin (1f-2w) and Caesar (3s). 5 credits per quarter.

11f-12w—Vergil. 5 credits per quarter; prerequisite, two years of high school Latin.

This course may be followed in the spring by 63s, "Plautus and Terence," 3 credits.

51f-52w-63s—Selected Readings from Prose and Poetry (51f), Horace (52w), Plautus and Terence (63s). 3 credits per quarter; prerequisite, three or four years of high school Latin.

LIBRARY METHODS

1f—The Use of Books and Libraries. 2 credits; no prerequisite. This course has no winter quarter continuation.

MATHEMATICS

In each of Courses 1, 6, 8, and 15 a placement test will be given at some time within the first two weeks of the quarter. Any student who fails in the test in Course 1 may be required to drop the course and to review his elementary mathematics before taking college mathematics. Any student who offers less than one year of high school higher algebra as a substitute for Course 1 and who fails the placement test given in Course 6, 8, or 15 will be required to take Course 1 before taking more advanced mathematics. A student who has had a complete year of elementary algebra, and a corresponding course in higher algebra for one-half year, should be able to pass the placement test in Course 6, 8, or 15.

1f-6w-7s—Higher Algebra (1f), Trigonometry (6w), College Algebra (7s). 5 credits per quarter; prerequisite, one year of elementary algebra* and, for 6w, one year of plane geometry.

1f-8w-20s—Higher Algebra (1f), Commerce Algebra (8w), Mathematics of Investment (20s). 5 credits per quarter; prerequisite, one year of elementary algebra.* Course 8w-20s is primarily for prebusiness students. See 8f-20w.

1f-15w-16s—Higher Algebra (1f), Elementary Mathematical Analysis (15w-16s). 5 credits per quarter; prerequisite, one year of elementary algebra* and, for 15w-16s, one year of plane geometry. Course 15w-16s is primarily for premedical students. See 15f-16w.

6f-7w-30s—Trigonometry (6f), College Algebra (7w), Analytic Geometry (30s). 5 credits per quarter; prerequisite, plane geometry and high school higher algebra; open for college credit to students who have had high school trigonometry.

7f—College Algebra. 5 credits. This course is open to freshmen who have had high school trigonometry if approved by the chairman of the department. It may be followed in the winter and spring by 30w, "Analytic Geometry," 5 credits, and 50s, "Differential Calculus," 5 credits.

8f-20w—Commerce Algebra (8f) which is a course in college algebra, including logarithms, and Mathematics of Investment (20w). 5 credits per quarter; prerequisite, high school higher algebra. This course is primarily for prebusiness students, but others may take it.

* Course 1 is open for college credit to students who have had, in addition to elementary algebra, not more than one-half year of high school higher algebra.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

15f-16w—Elementary Mathematical Analysis. 5 credits per quarter; prerequisite, plane geometry and high school higher algebra. This course is for premedical and other students who desire a survey of college mathematics including trigonometry, algebra, and calculus with emphasis on fundamental ideas rather than on technical preparation for more advanced courses in mathematics. It is a prerequisite for the course in physics which is required of premedical students.

Mathematics 14, "Solid Geometry" (3 credits), is offered each quarter to freshmen who have had plane geometry and higher algebra.

Mathematics 10, "Spherical Trigonometry" (2 credits), is offered to freshmen in the winter and in the spring, with this prerequisite: Mathematics 6, or high school trigonometry if approved by the chairman of the Department of Mathematics, and solid geometry or registration in Mathematics 14 (Solid Geometry).

MILITARY SCIENCE AND TACTICS

1f-2w-3s—First Year Basic Course. 1 credit per quarter. The Basic Course in Military Science extends through the freshman and sophomore years. There is no prerequisite for the first year's work; but higher algebra (unless the student had it in high school) and trigonometry are prerequisites for the work of the second year. The student should take trigonometry or higher algebra in the fall quarter according as he has or has not had high school higher algebra. Students may register for the Basic Course without these prerequisites and substitute playing in the band for the regular military work, with the understanding that this choice renders them ineligible for the Advanced Course in Military Science.

MUSIC

Music courses of general interest are "Music Appreciation" (31f-32w-33s) and, for those who can sing or play an instrument, "Orchestra" (40f-41w-42s) or "University Chorus" (43f-44w-45s).

Mu. Ed. 1f—Music Orientation. This is a course, for no college credit, for freshmen who expect to major in music.

1f—Ear Training. 2 credits; prerequisite, a placement test, for which students may make arrangements in the office of the Department of Music. This course may be followed by 2w-3s, "Ear Training," 1 credit per quarter, or by 4w-5s, "Harmony," 3 credits per quarter.

11-27—Practical Music (Piano, Voice, Violin, Viola, Cello, Double Bass, Flute, Oboe, Clarinet, Bassoon, Trumpet, French Horn, Trombone, Tuba, Percussion, Harp, Organ). 2 or 4 credits per quarter according as the student takes one or two lessons a week; prerequisite, certain entrance requirements, which are stated on page 28 of this bulletin, and the consent of the Department of Music. (There are courses in Piano and Voice for those who cannot meet these entrance requirements. See Af-Bw-Cs and Df-Ew-Fs below). There are special fees for these courses. (See page 7). Class lessons, which are less expensive, are given in piano and voice.

Af-Bw-Cs—Piano. No credit; for students without the entrance requirements in piano; prerequisite, consent of the Department of Music. There is a special fee for this course. (See page 7.)

Df-Ew-Fs—Voice. No credit; for students without the entrance requirements in voice; prerequisite, consent of the Department of Music. There is a special fee for this course. (See page 7.)

29—The Physical Basis of Music. 3 credits; no prerequisite. This course may be followed by 30, "Physics of Tone Color and Tone Production," 3 credits. (These courses, 29 and 30, are not offered in 1942-43.)

- 31f-32w-33s—Music Appreciation. 2 credits per quarter; no prerequisite. This is a course for the cultivation of better understanding of music heard today. It is designed for students with a general interest in music rather than for those majoring in music. Students may enter any quarter.
- 40f-41w-42s—Orchestra. 2 credits per quarter; prerequisite, consent of the director. Students may enter any quarter.
- 43f-44w-45s—University Chorus. 1 credit per quarter; prerequisite, consent of the director. Students may enter any quarter.

NATURAL SCIENCE

- 1f-2w-3s—Orientation in the Natural Sciences. 5 credits per quarter; no prerequisite. Students may enter any quarter and need not take the whole course to get credit for part of it. This is an introductory course in the natural sciences. The subject matter of the various sciences will be integrated into a survey course with assigned readings, field trips, and demonstration lectures. The entire course (15 credits), but not a 5- or 10-credit part of it, will satisfy the natural science requirement for admission to the Senior College, or the School of Business Administration, or the College of Education. The individual quarters (1f, 2w, 3s) may be taken as elective courses.

NAVAL SCIENCE AND NAVIGATION

- Naval Science 1f-2w-3s—First Year Basic Course. 1½ credits per quarter; prerequisite, consent of the department. NOTE.—All students must be interviewed by a professor of naval science and tactics, given a special physical examination, and selected for the course before registering for Naval Science 1f.
- Navigation 1f-2w-3s—Elementary Navigation and Piloting (1f), Celestial Navigation (2w), Deep Sea and Aerial Navigation (3s). 3 credits per quarter; prerequisite, plane trigonometry.

NORWEGIAN

- 1f-2w-3s—Beginning Norwegian (1f-2w) and Intermediate Norwegian (3s). 5 credits per quarter; no prerequisite.

PHILOSOPHY

- 2f-1w-3s—Logic (2f), Problems of Philosophy (1w), Ethics (3s). 5 credits per quarter; no prerequisite. This is a special sequence of courses in philosophy for prelaw freshmen.
- 2f-1w-3s—General Philosophy. A year sequence equivalent to Logic, Problems of Philosophy, and Ethics—A presentation and analysis of intellectual and moral values competing for acceptance in the modern world. Scientific and other ways of knowing; various world-view and philosophies of life; ideals for social action. 5 credits per quarter; no prerequisite. Students may enter any quarter.

PHYSICAL EDUCATION FOR MEN*

- 1f-2w-3s*—Sports Education. Students may enter any quarter. This course includes instruction and participation in the following activities: swimming, lifesaving, boxing, badminton, tennis, basketball, handball, soft ball, touch ball, squash, golf, and individual physical education activities (by special permission). During the war this college will give one credit per quarter for this course.

* This course is elective, not required, in the College of Science, Literature, and the Arts. It is, however, required for admission to the College of Education.

PHYSICAL EDUCATION FOR WOMEN*

- 1f-2w-3s*—A General Course in Physical Education. Students may enter any quarter. The activities which students may choose are *Aquatics*: canoe paddling, swimming, lifesaving. *Rhythms*: country dancing, folk dancing, the modern dance, social dancing, tap dancing. *Individual Sports and Activities*: archery, badminton, bowling, golf, horseback riding, individual body building, rifle marksmanship, skating, skiing, tennis. *Team Sports and Activities*: basketball, posture and daily life skills, fundamental sports skills, softball, team sports officiating, volleyball.
- 7f*—Lectures in Health and Physical Education. This course is offered also in the winter (7w) and in the spring (7s).

PHYSICS

Courses in physics for premedical students and for those who will major in physics, mathematics, or chemistry are not open to beginning freshmen in their first and second quarters since college mathematics is a prerequisite.

- 1f-2w†-3s—Introduction to Physical Science (without laboratory). 3 credits per quarter; prerequisite, high school algebra and plane geometry. This course is for students who want a general course in physics as a part of a liberal education. If taken with laboratory (see below), it satisfies the natural science requirement in this college. It is not for premedical students or for those who will major in physics, mathematics, or chemistry. It is required of premedical and medical technology students but is usually taken by them in their sophomore year. The same course with laboratory included is listed as 1af-2aw-3as.
- 1af-2aw†-3as—Introduction to Physical Science (with laboratory included). 4 credits per quarter; prerequisite, high school algebra and plane geometry. See 1f-2w-3s.

Physics 4, "Mechanics and Heat" (5 credits), the first part of Course 4-5-6 which is primarily for premedical students, is offered in the spring quarter to those who have had these prerequisites: Mathematics 15-16, "Elementary Mathematical Analysis;" or Mathematics 6, "Trigonometry," and either Mathematics 7 or 8 which are courses in college algebra.

PHYSIOLOGY

- 1f—Elements of Physiological Chemistry. 4 credits; no prerequisite. This course is open to beginning freshmen, but those who enter college in the fall are advised not to take it earlier than the spring quarter of their freshman year. It has no winter quarter continuation.
- 2f—Elements of Physiology. 4 credits; no prerequisite. This course is open to beginning freshmen, but those who enter college in the fall are advised not to take it earlier than the spring quarter of their freshman year. It has no winter quarter continuation.

POLITICAL SCIENCE

- Af-Bw-Cs†—Introduction to Government. 3 credits per quarter; for prelaw students only; no prerequisite.
- 1f-2w†-3s—American Government and Politics. 3 credits per quarter; for all except prelaw students; no prerequisite.

Political Science 7, "Comparative European Government" (3 credits); 15, "Elements of Political Science" (3 credits); and 25, "World Politics" (3 credits), are open to freshmen who have had Course 1.

* The College of Science, Literature, and the Arts does not require these courses nor does it give credit for them. They are, however, required for admission to the College of Education.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

PREVENTIVE MEDICINE

3f—Personal Health. 2 credits; no prerequisite. This course may be followed in the winter (or spring) by 4w (or 4s), "Health Problems of Adult Life," 2 credits.

RUSSIAN

1f-2w-3s—Beginning Russian. 5 credits per quarter.

SOCIAL SCIENCE

1f-2w-3s—Introduction to Social Science. 4 credits per quarter; no prerequisite. The entire course (12 credits), but not any part of it, will satisfy the social science requirement for admission to the Senior College. The principal objective of the course is to aid the student in acquiring an understanding of the social world in which he lives. The class discussions and assigned readings will be focused upon human interdependency; the institutions of the contemporary world; the problems engendered by human social interrelations; and the methods used by men to understand and to control social phenomena.

SOCIOLOGY

The first course in sociology (Course 1, "Introduction to Sociology," 5 credits) is not open to beginning freshmen but is regularly open to third quarter freshmen, many of whom can find a place for it on their spring quarter programs. By special permission a limited number of freshmen who enter college in the fall will be allowed to take sociology in the winter.

SPANISH

1f-2w-3s—Beginning Spanish (1f-2w) and the first part of Intermediate Spanish (3s). 5 credits per quarter.

2f-3w-4s—The second part of Beginning Spanish (2f) and Intermediate Spanish (3w-4s). 5 credits per quarter; prerequisite, one year of high school Spanish.

3f-4w—Intermediate Spanish. 5 credits per quarter; prerequisite, two years of high school Spanish. This course may be followed in the spring by 20s, "Oral and Written Spanish," 5 credits; or by 30s, "Spanish Commercial Correspondence," 3 credits.

SPEECH

The beginning course, "Fundamentals of Speech," which is offered as 1f-2w-3s† (3 credits per quarter) or 5f-6w† (5 credits per quarter), is open to those freshmen who are exempt from required English. (See Regulations Applying to Freshman English, page 9.) Other freshmen may take Speech only by special permission of the department.

SWEDISH

7f-8w-9s—Beginning Swedish (7f-8w) and Intermediate Swedish (9s). 5 credits per quarter; no prerequisite.

VOCATIONAL ORIENTATION

1f—Vocational Orientation. 2 credits; no prerequisite. This course is an introduction to the University of Minnesota agencies which help students make educational and vocational plans. There will be discussions and lectures about the best methods of making choices. Some of the lectures will be illustrated by motion pictures. There will be opportunities for students to hear speakers from different university departments and community business organizations and to have individual conferences with instructors and counselors. The course has no winter quarter continuation.

ZOOLOGY

1f-2w-3s†—General Zoology. $3\frac{1}{2}$ credits per quarter; no prerequisite.

† To receive credit for any part of this course a student must complete the parts preceding the dagger.

FRESHMAN COURSES WHICH BEGIN IN THE WINTER QUARTER*

Architecture DP-1w and M-1w; Art Education 4w-6s; Astronomy 20w; Botany 1w; Chemistry 9w-10s; Drawing 41w-42s and 44w; Economics 2w-3s and 32w-33s; English 4w-5s and Aw-Bs; English 27w-28s, 22w-23s, 38w-39s, and 40w-41s for students exempt from Freshman English; Fine Arts 2w-3s; French 1w-2s, 2w-3s, 3w-4s; Geology 1w-2s, Aw-Bs, 1w-3s, Aw-Cs, and 8w; German 1w-2s, 2w-3s, 3w-4s; History 1w-2s; Home Economics; How To Study 1w; Latin 12w, for students who have had three years of high school Latin; Library Methods 1w; Mathematics 1w-6s, 1w-8s, 6w-7s, 7w-30s, 8w-20s, 10w, 14w, 15w-16s; Military Science 2w (for which 1f is not a prerequisite); Music 1w, 32w-33s, Courses 11-27 (Practical Music), 41w-42s, 44w-45s; Natural Science 2w-3s; Philosophy 2w-1s; Physical Education for Men 2w-3s; Physical Education for Women 2w-3s and 7w; Political Science 1w-2s; Preventive Medicine and Public Health 3w; Spanish 1w-2s, 2w-3s, 3w-4s; Speech 1w-2s and 5w-6s, for students exempt from Freshman English; Vocational Orientation 1w.

FRESHMAN COURSES WHICH BEGIN IN THE SPRING QUARTER‡

Anatomy 3s; Architecture DP-1s and M-1s; Art Education 4s; Astronomy 11s and 20s; Botany 1s and 10s; Economics 32s; English 4s; English 27s, 23s, 39s, and 41s, for students exempt from Freshman English; Fine Arts 3s; French 1s, 2s, 3s; Geology 1s, As, and 8s; German 1s, 2s, and 3s; Home Economics; How To Study 1s; Latin 3s, for students who have had one year of high school Latin; Library Methods 1s; Mathematics 1s, 6s, 7s, 8s, 10s, and 14s; Military Science 3s (for which 1f-2w is not a prerequisite); Music 33s, Courses 11-27 (Practical Music), 42s and 45s; Natural Science 3s; Navigation 1s; Philosophy 2s; Physical Education for Men 3s; Physical Education for Women 3s and 7s; Physiology 1s and 2s; Preventive Medicine and Public Health 3s; Spanish 1s, 2s, 3s; Speech 5s, for students exempt from Freshman English; Vocational Orientation 1s.

ADVISERS

Every new freshman student will be assigned to a faculty counselor who will help him during the registration period, and who will be available throughout the year to aid in personal matters, in choosing a vocation, or in planning the quarter's study program. Each quarter's registration must be approved by this adviser.

A freshman student who has not decided on the general plan of his college course before entrance should begin at once to consider whether he will elect the curriculum for concentration in a major subject or the curriculum in liberal arts (pages 20-21) or one of the professional courses—library training, social work, medicine, etc. (pages 31-53). He should seek the help of his faculty counselor in deciding which program to select.

Every student is expected to make the planning of his study program a serious part of his work. The student should plan his program and submit it to his adviser for suggestions and approval. Advisers are available for discussion of student programs at any time during the year.

Freshmen with advanced standing and sophomores who have not been assigned to advisers may discuss their study programs with the assistant dean for the Junior College, Room 106, Folwell Hall, or with Senior College advisers in lines of work in which they are interested. These students may get counselors by applying to the office of the Committee of Faculty Counselors, Room 114, Psychology Building.

* These courses are open to students who enter college as beginning freshmen in the winter quarter. For titles, credits per quarter, prerequisites, and other information about these courses, students should refer to the courses with the same numbers in the preceding list of freshman courses which begin in the fall quarter.

‡ These courses are open to students who enter college as beginning freshmen in the spring quarter. For titles, credits per quarter, prerequisites, and other information about these courses, students should refer to the courses with the same numbers in the preceding list of freshman courses which begin in the fall quarter.

COURSES OF STUDY

I. A TWO-YEAR COURSE LEADING TO THE DEGREE OF ASSOCIATE IN LIBERAL ARTS*

The degree of associate in liberal arts is given for the two years of college work (90 credits) outlined below. Students may choose freely from the many subjects of study offered by the college to freshmen and sophomores. The only restrictions are these: (1) normally the 90 credits must be earned in not more than seven quarters of residence; (2) the student must meet requirements in English and in at least two of three groups of subjects (foreign languages, social sciences, natural sciences).

More specifically the requirements are these:

1. Group Requirements

- A. English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or exemption from the requirement. All students are required to take a placement test before registering for any course in English or composition. (See page 9.)

Any two of the following group requirements (B, C, D):

- B. Foreign language, 0 to 20 credits, according to the following schedule:†

<i>Amount Presented for Entrance</i>	<i>Amount Required in Junior College</i>
Four years of one language	None
Three years of one language	5 credits in same language
Two years of one language	10 credits in same language
One year of one language	15 credits in same language
Less than a year of one language	20 credits in one language

- C. 10 credits** in one of the social sciences: anthropology, economics, geography, history, political science, sociology
or

12 credits in Social Science 1f-2w-3s (Introduction to Social Science)‡

- D. 10 credits** in one of the natural sciences: astronomy, botany, chemistry, geology (including laboratory), physics (including laboratory), psychology (including laboratory), zoology
or

15 credits in Natural Science 1f-2w-3s (Orientation in the Natural Sciences)§

2. Electives to make the required total of 90 credits, which must normally be earned in not more than seven quarters of residence. If a student enters this college with advanced standing, he must spend the last three quarters before graduation in residence and he must earn at least 45 of the required 90 credits in residence.

All students who meet the requirements outlined above are eligible for the degree, including those who are admitted to the Senior College or the professional schools as well as those who remain in the University for only two years.

II. THE COURSE LEADING TO THE DEGREE OF BACHELOR OF ARTS*

This is the regular curriculum offered for those who want a four-year college course leading to the bachelor of arts degree. The requirements to be met in the Junior College and in the Senior College are stated separately and at length in the following paragraphs.

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

† For students who enter this University with advanced standing, the number of credits required may be less than that indicated in this schedule. Any course of 9 credits (6 semester credits) may be substituted for the corresponding 10-credit course here.

‡ This is a new course which was offered for the first time in 1941-42. To meet the natural science requirement in this curriculum, the whole course must be taken. A 10-credit part of it is not enough. The individual parts (1f, 2w, 3s) may be taken separately as electives.

§ This is a new course which will be offered for the first time in 1942-43.

** Or 9 credits in a year course or 9 credits (6 semester credits) of advanced standing.

A brief summary is given first for the convenience of students, but they should not take that as fully explanatory. They *must read* the subsequent paragraphs if they are to understand the requirements.

SUMMARY

The Junior College requirements for admission to the Senior College are as follows :

1. English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or exemption from the requirement. (See page 9.)
2. Foreign language, 0 to 20 credits according to a schedule given in a subsequent paragraph.
3. Ten credits† in one of the social sciences or 12 credits in Social Science 1f-2w-3s (Introduction to Social Science)
4. Ten credits† in one of the natural sciences or 15 credits in Natural Science 1f-2w-3s (Orientation in the Natural Sciences)
5. A total of at least 90 credits, with an average of one honor point per credit.

The Senior College requirements for graduation are normally as follows :

1. A total of 90 credits, to be earned in Senior College courses except as the student's adviser approves more Junior College courses. Subsequent paragraphs tell how the required number may be less than 90 for students who enter the Senior College with more credits than are required for admission.
2. An average of one honor point per credit.
3. (a) A department major (27 to 36 credits in Senior College courses), and one minor sequence of 15 credits or two minors of 9 credits each
or
(b) An approved "liberal arts" program, with less specialization.

The general purpose of the curriculum is to enable capable students to attain the ends of higher liberal education, allowing each one to do the work best suited to develop his powers and to satisfy his interests. Faculty advice is offered to each student in planning this course.

Two general plans of study are offered, one providing for concentration, the other offering opportunity for greater breadth of training. The first plan is the traditional one, involving the pursuit of major and minor studies in the Senior College. The second is a curriculum in liberal arts‡ intended for those who wish to get a broader view of the fields of knowledge or to draw upon a wider range of studies in preparing themselves for life. Graduation honors are open to candidates for the B.A. degree on either plan.

The requirements of the course include the selection of studies according to certain principles and a certain quality in the student's work. For convenience these requirements are stated concretely in terms of time, credits, and grades. Students should understand that the time spent and the credits entered on the books are not the real object but only symbols used in keeping the records.

JUNIOR COLLEGE

The purpose of the specific requirements stated is to prepare for satisfactory work in the Senior College those who are candidates for the B.A. degree. A student will be admitted to the Senior College on the completion of the following work or the equivalent in another recognized institution.

Required Courses and Distribution of Work

1. In four groups of subjects there are specific requirements as follows :

- A. English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or exemption from the requirement. All students are required to take a placement test before registering for any course in English or composition. (See page 9.)

† Or 9 credits in a year course or 9 credits (6 semester credits) of advanced standing.

‡ See page 24; for a Special Course in the Humanities, see page 25; and for a Course in Preparation for Theological Training, see page 25.

B. Foreign language, 0 to 20 credits, according to the following schedule:†

<i>Amount Presented for Entrance</i>	<i>Amount Required in Junior College</i>
Four years of one language	None
Three years of one language	5 credits in same language
Two years of one language	10 credits in same language
One year of one language	15 credits in same language
Less than a year of one language	20 credits in one language

- C. 10 credits* in one of the social sciences: anthropology, economics, geography, history, political science, sociology.
or
12 credits in Social Science 1f-2w-3s (Introduction to Social Science)‡
- D. 10 credits* in one of the natural sciences: astronomy, botany, chemistry, geology (including laboratory), physics (including laboratory), psychology (including laboratory), zoology
or
15 credits in Natural Science 1f-2w-3s (Orientation in the Natural Sciences)§

Freshmen may take any of the "Studies for Freshmen" listed on page 10 except courses which are specifically announced as limited to special groups of students; but they are advised to have these group requirements in mind when they are planning their programs.

In addition to these specified studies the student will take studies chosen by himself (electives) to make up the number of credits required. (See the following paragraphs.)

2. In order that the student may be prepared on entering the Senior College to devote his time to Senior College studies, he should examine the prerequisites for the Senior College courses in the fields in which he is interested. By the end of his sophomore year he is expected to be prepared for Senior College studies in at least five departments. The amount of such preparation necessary in the different departments is indicated below:

Anthropology (10 credits)	Geography (10 credits)
Architecture (10 credits)	Geology (10 credits, including 4 credits in laboratory)
Astronomy—Astronomy 11 (Descriptive Astronomy and Mathematics 6 (Trigonometry)	German—through Course 4 (Intermediate German)
Bacteriology—Zoology 1-2-3 and 10 credits in chemistry	Greek—Courses 1-2, 3 (15 credits)
Biostatistics—18 credits in biological science or mathematics through analytic geometry	History (9 credits)
Botany (10 credits)	Italian—Courses 1-2, 3 (15 credits)
Chemistry—through Course 12-13 (Qualitative Chemical Analysis)	Journalism—Courses 13, 14-15 (Introduction to Reporting, Newspaper Reporting)
Child Welfare—Psychology 1-2 and Child Welfare 40	Latin—through Course 12 (Vergil)
Economics—Course 6-7 (Principles of Economics)	Mathematics—through Course 30 (Analytic Geometry)
English Composition—Course A-B-C (Freshman English) or Course 4-5-6 (Freshman Composition), and Course 27-28 (Advanced Writing)	Music (10 credits)
English Literature—Course A-B-C (Freshman English); or Composition 4-5-6 (Freshman Composition) and 6 additional credits in literature; or 10 credits in Course 21-22-23 (Introduction to Literature)	Norwegian—through Course 4-5-6 (Advanced Norwegian)
Fine Arts (9 credits)	Philosophy (10 credits)
French—through Course 3-4 (Intermediate French)	Physics—Course 1a-2a-3a or 4-5-6 or 7-8-9
	Political Science (9 credits)
	Psychology (9 credits)
	Sociology (10 credits)
	Spanish—through Course 3-4 (Intermediate Spanish)
	Speech (9 credits)
	Swedish—through Course 10-11-12 (Advanced Swedish)
	Zoology (10 credits)

* Or 9 credits in a year course or 9 credits (6 semester credits) of advanced standing.

† For students who enter this University with advanced standing, the number of credits required may be less than that indicated in this schedule. Any course of 9 credits (6 semester credits) may be substituted for the corresponding 10-credit course here.

‡ This is a new course which was offered for the first time in 1941-42. To meet the natural science requirement for admission to the Senior College, the whole course must be taken. A 10-credit part of it is not enough. The individual parts (1f, 2w, 3s) may be taken separately as electives.

§ This is a new course which will be offered for the first time in 1942-43.

3. If a student elects the curriculum for concentration he must plan to secure the necessary preparation for a major sequence in consultation with a major adviser. He should apply at the departmental office and be assigned to a major adviser. If he chooses the curriculum in liberal arts he should elect elementary courses in those departments in which he wishes to do advanced work in his junior and senior years. He should apply to the Senior College office (217 Folwell Hall) for assignment to an adviser.

The choice between the curriculum for concentration and the curriculum in liberal arts should be made by the student not later than the end of his sophomore year. He is at liberty to consult with Senior College advisers at any time that he desires and will be assigned to an adviser whenever he has chosen his course.

Amount and Quality of Work

The student must earn a total of 90 credits, with an average of one honor point per credit, or a smaller number of credits determined as follows: For every five honor points in excess of one honor point per credit, the number 90 is diminished by one. (Credits thus earned by excess honor points are called "quality credits." See paragraphs 30, 31, 32 on page 5.)

A student entering with advanced standing from some other institution must complete the same requirements. He must secure an average of one honor point per credit for work done in this University. Quality credits can be earned only in connection with the work done in this University.

While the quality of work normally expected is expressed by an average of one honor point per credit, improvement in the quality of work as the student progresses will be taken into account by the Students' Work Committee. If improvement and other considerations are accepted in part as the basis of promotion, the average of one honor point per credit will be required in the last 45 credits. Students who wish to enter the Senior College on these terms should apply to the Senior College office, 217 Folwell Hall.

While the normal time of residence in the Junior College is two years, this may be shortened by the application of quality credits, or it may be necessary for the student to spend a longer time in order to demonstrate ability to do work of the quality expected. *The student is expected to enter the Senior College as soon as he has completed the preparation required.* Students should apply for admission to the Senior College as soon as they have the required 90 credits and a C average even if they have not met all the group requirements (English, foreign language, social science, natural science). They may be admitted provisionally. Credits earned in the Junior College *after the student is qualified to enter the Senior College* may not ordinarily be counted to meet the requirements of the Senior College. Extra credits in Senior College courses may be counted toward meeting the Senior College requirements for graduation. *Extra credits in Junior College courses may be counted only with the approval of the Students' Work Committee.*

SENIOR COLLEGE

The student is expected to devote his time to Senior College studies except in so far as, in the judgment of his Senior College adviser, additional elementary studies definitely contribute to his intellectual development.

The normal period of residence is six quarters and the normal credit requirement is 90 credits. The student must maintain an average of one honor point per credit in the work done while in residence in the Senior College. The number of credits may be diminished and the period of residence shortened by application of quality credits* earned in Senior College courses during residence in the Senior College.

* For a definition of quality credits, see paragraphs 30, 31, 32, on page 5.

Requirements in the Curriculum for Concentration

1. Each student electing this curriculum must complete a coherent and progressive sequence of Senior College courses, known as a *major sequence*, as specified by the department which offers it. Such major sequences are offered by the following departments: Anthropology, Architecture, Astronomy, Bacteriology, Biostatistics, Botany, Chemistry, Classics, Economics, English, Fine Arts, Geography, Geology and Mineralogy, German, History, Journalism, Linguistics and Comparative Philology, Mathematics, Music, Philosophy, Physics, Physiology, Political Science, Psychology, Romance Languages§, Sociology and Social Work¶, Speech, Zoology. The courses constituting a major sequence in any department are announced in the University's *Combined Class Schedule*. The major sequences in Journalism and Music are also announced in this bulletin, pages 26 and 28.

A student must maintain an average of one honor point per credit in the work of the major sequence.

2. A *minor sequence* of 15 credits, or *two minors* of 9 credits each, in Senior College courses. These must be taken in some department or departments other than the student's major department and in addition to his major sequence.

3. The whole plan of studies in the Senior College must receive the approval of the major adviser.

Requirements in the Curriculum in Liberal Arts

Each student who wishes to elect this curriculum must submit to the assistant dean for the Senior College a plan of study in which the subjects and courses chosen are related to one another and to the student's purpose and are intelligently arranged in a working program. If this plan gives evidence of a central purpose, the student will then be assigned to an adviser who will examine and discuss the plan with him. The program as approved by the adviser is to be carried out in harmony with the general requirements.

An indefinite variety of study programs† may be recognized under this heading. They may serve the purpose of the student who is interested in general culture, in literary or artistic pursuits, in comparative literature, in the integration of fields of study ordinarily separated by departmental organization, in critical interpretation, or in any activity, preparation for which requires the student to draw upon several fields. This curriculum is intended to provide for the making of programs by individuals to suit their own interests or needs.

In conference with his adviser, the student will work out a program for his Senior College years. When this program has been approved by the adviser and the assistant dean, it becomes a contract between the college and the student, and no change in it may be made without the written permission of the adviser. The adviser represents the college in approving the individual's program.

Requirements for Graduation

For graduation a student must satisfy all specific requirements stated above.

It is ordinarily expected that a student who enters as a freshman will spend four years (twelve quarters) in residence in the college. The period of residence may be shortened by the application of quality credits or by taking examinations for credit (see paragraph 8, on page 3.) If a student has transferred from some other college

† The Senior College courses in this approved program are said to constitute a "liberal arts major." Two such majors are outlined in subsequent paragraphs, under the headings "Preparation for Theological Training" and "A Special Course in the Humanities."

§ An interdepartmental sequence in Latin-American studies is offered under the direction of the Department of Romance Languages. See page 27 of this bulletin.

¶ For an interdepartmental sequence recommended as preparation for graduate social work, see page 32 of this bulletin.

he must spend the last three quarters before graduation in residence in the Senior College and must earn a minimum of 45 credits in residence in the Senior College.

The credit requirement for graduation is: 180 credits with an average of one honor point per credit, or a smaller number of credits as provided in the above rules governing the Junior College and the Senior College, respectively.

Preparation for Theological Training

The attention of students intending to enter theological seminaries or to take other special training for religious work is drawn to the following liberal arts major:

1. Philosophy 50-51-52. General History of Philosophy (9 credits).
2. Nine credits from these courses in philosophy:
 - 106-107. Philosophy of Plato (6 credits)
 - 114. American Philosophy from Puritanism to Pragmatism (3 credits)
 - 180. History of Religions (3 credits)
 - 181. Psychology of Religion (3 credits)
 - 182. Philosophy of Religion (3 credits)
3. Nine credits from these courses in history:
 - 53-54-55. Medieval European History (9 credits)
 - 53a-54a-55a. Renaissance and Reformation (9 credits)
4. Eighteen credits from the following group: 9 credits in Senior College Greek; 9 credits in Senior College psychology; 9 credits in Senior College economics; 9 credits in Senior College sociology, including Sociology 115 (Religion As a Social Institution).
5. Fifteen additional Senior College credits, making a total of 60 credits in Senior College courses.

Students interested in this program may consult with Mr. Conger or Mr. Castell, in Room 300 Folwell Hall.

Special Course in the Humanities

The Course in the Humanities has been planned for selected students to enable them to acquire, through the systematic co-ordination of history, philosophy, the fine arts, music, the ancient and modern languages, a well-ordered knowledge of our cultural development. It is by the study of the relationship between habits of thought, historical events, and the cultural expression of past civilizations that one may determine accurately the causes and meanings of past events and also gain help in facing and solving the problems of contemporary life. The course is so arranged that a student, starting with the facts of history as a basis, may study critically in historical sequence the great monuments of creative energy and may thus acquire a precision of method and thought no less exact or useful than that of the natural and physical sciences.

Admission to the Course in the Humanities is limited to students who, in the judgment of the committee in charge, are properly qualified. The greatest possible freedom for the student is desired, and the course is planned so that it will adapt itself to the needs and preferences of the individual. The work of a student, after admission to the course, will be supervised by an adviser and a committee made up of members of the departments concerned.

No prerequisites are necessary for admission to the Course in the Humanities. It is, however, strongly recommended that the student who plans to enroll in it have, while in high school, two or more years of a foreign language and the basic courses in history and literature. Upon the completion of such preparatory work the student is free to study more varied and more advanced subjects earlier in his college career.

The general requirements for admission to the Senior College and for graduation are the same as in the Curriculum in Liberal Arts. (See page 24.) The specific requirements for the course are as follows:

1. Two years of Senior College work in one foreign language.
2. A reading knowledge, attainment of which may be determined by examination, of at least one other foreign language.
3. Concentration on one of the four great periods of culture, Ancient, Medieval, Renaissance, or Modern. The courses in literature, history, fine arts, philosophy, and other expressions of one of these periods are to be chosen so as to complement each other. At least 90 credits are to be taken in the field of concentration, of which at least 60 credits must be in Senior College courses.
4. Electives to make up the remainder of 180 credits may be chosen according to the student's wishes, provided the requirements of his curriculum are fulfilled. It is advised, however, that the electives be chosen from contiguous fields.

Various suggested programs for the four-year course may be had on application to Professor Ogle, 118 Folwell Hall.

Education for Journalism†

Advisers.—Professors Casey, Charnley, Barnhart, and Nafziger; Assistant Professors Ford and Kildow.

Professional training for journalism is provided by a major in the School of Journalism leading to the degree of bachelor of arts, for which the requirements are given on pages 20-25. The course is built upon the principle that a well-trained journalist must possess a broad cultural training, a prerequisite to successful journalistic work, plus a sound working knowledge of the theory and technique of his profession.

The student's distinctly journalistic training begins in his sophomore year with a course in reporting, which he may enter if he has satisfied the scholastic requirements of the school.

No student may enroll in sophomore journalism courses unless he has an average of C in the total courses taken in his freshman year and a similar average in the required freshman work in English. Exceptions to this rule can be made only under unusual circumstances and then only by permission of the Students' Work Committee on recommendation of the director of the School of Journalism.

The student begins the Senior College major sequence in journalism after satisfying the usual requirements for admission to the Senior College described on pages 21-23. Altho a student may meet these requirements in his own way, the School of Journalism recommends the following courses of study for the freshman and sophomore years:

1. English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits), or exemption from the requirement. (See page 9.)
2. French, German, or Spanish to meet the foreign language requirement.
3. Social Science 1-2-3 (Introduction to Social Science) or economics or history or political science or sociology, to meet the social science requirement.
4. Natural Science 1-2-3 (Orientation in the Natural Sciences) or psychology (with laboratory), or zoology, to meet the natural science requirement.
5. Advanced Writing (Composition 27-28); Introduction to Reporting (Journalism 13); and Newspaper Reporting (Journalism 14-15); which are prerequisites for the Senior College major sequence in journalism.
6. Electives to make the required total of 90 credits.

Recommended electives are: Political Science 1-2-3 (American Government and Politics); Political Science 7 (Comparative European Government); Political Science 25 (World Politics); Psychology 1-2 (General Psychology); Sociology 1 (Introduction to Sociology); Sociology 6 (Social Interaction); Economics 6-7 (Principles of Economics); at least nine credits in history.

The Senior College curriculum is arranged to offer training for metropolitan journalism, small daily or weekly journalism, including newspaper advertising and business management aspects of the publishing industry, magazine writing and editing, advertising,

† For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

and public relations work, radio writing and advertising; and, in co-operation with the College of Education, for teaching journalistic writing and supervising student publications in high schools and junior colleges.

When students enter the Senior College they are advised to select their elective work for preparation in special fields. Editorial courses are designed to train students in news-gathering, writing and editing, feature and magazine writing, newspaper administration, magazine editing and administration, and radio writing. Business courses train them in newspaper and periodical advertising, circulation problems, and business management methods. Students electing business sequences may take minor work in advertising and marketing in the School of Business Administration, together with a course in the psychology of advertising.

The major sequence in journalism in the Senior College is as follows: Course 51-52 (News Editing) (51 for women; 51-52 for men); Course 55 (Advertising and Newspaper Typography); Course 69 (Newspaper and Magazine Articles) or Course 73 (Magazine Writing and Editing); Course 101 (The Reporting of Public Affairs) (for men); Course 109-110 (History of Journalism); Course 112 (Current Newspaper Problems); Course 140-141 (Contemporary Affairs); and 9 additional credits to be chosen in conference with the major adviser. Students of marked ability may substitute for these 9 additional credits in journalism Senior College courses in other departments with the approval of the major adviser in journalism. Women students who do not elect Courses 52 and 101 must substitute other journalism courses of equivalent hours.

The school offers a minor sequence for students in the College of Agriculture, Forestry, and Home Economics, the Institute of Technology, and the School of Business Administration.

A minor sequence for students in the College of Education provides training for those who wish to enter teaching.

*A Course in Latin-American Studies**

Adviser.—Associate Professor LeFort.

This course in specialization in Latin-American studies brings together into one group the courses in various aspects of Latin-American life and culture offered by different departments. It includes courses in anthropology, economics, fine arts, geography, history, and Spanish.

The student will receive a thoro cultural training as well as a broad preparation for business or, if he elects enough courses in political science, for diplomatic dealings with Latin-American countries.

The work of the first two years, taken in the Junior College, consists of the regular academic requirements for admission to the Senior College, as given on pages 21-23, with electives chosen to include the following courses as preparation for Senior College work: Anthropology 40 or 41 (Introduction to Anthropology) or Anthropology 42 (The Growth of Cultures); Economics 6-7 (Principles of Economics); Fine Arts 1-2-3 (Introduction to Art); Geography, 8 credits; Spanish 1-2 (Beginning Spanish) and 3-4 (Intermediate Spanish).

Recommended electives are: History 1-2-3 (European Civilization); History 20-21-22 (American History); Political Science 1-2-3 (American Government and Politics); Political Science 25 (World Politics).

The work of the junior and senior years is subject to the requirements of the course

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

leading to the degree of bachelor of arts which are given under the headings *Senior College* (page 23) and *Requirements for Graduation* (page 24) with this exception:

The requirements of a major sequence and one or two minors (page 24) are replaced by the following interdepartmental sequence:

1. Anthropology 118. Indian Civilizations of Mexico and Peru (3 credits).
2. Economics 141. Monetary and Banking Policy (3 credits).
3. Economics 176. International Commercial Policies (3 credits).
4. Economics 127. Comparative Banking: South American Systems (3 credits).
5. Fine Arts 57-58-59. Art in the Americas (9 credits).
6. Geography 110. Geography of South America (3 credits)
7. History 93a-94a-95a. Survey of Latin-American History (9 credits).
8. Spanish 74-75-76. Survey of Spanish American Literature: Contemporary Prose and Poetry (9 credits).
9. Spanish 70-71. Latin-American Culture (6 credits).
10. Spanish 53. Spanish Composition (3 credits).
11. Spanish 54-55. Spanish Conversation (6 credits).

Recommended electives are: Anthropology 80 (The American Indian); Economics 124 (Comparative Banking: British Systems); Economics B. A. 177 (Foreign Trade); Economics 185 (Economics of Marketing); Geography 71 (Geography of North America); History 65-66-67 (Europe in the Twentieth Century); Spanish 140-141-142 (Contemporary Latin-American Literature).

Modifications of this interdepartmental sequence will be permitted upon petition approved by the adviser and the assistant dean for the Senior College.

*A Course in Music**

Advisers.—Professor Ferguson; Associate Professor Hull.

To secure the degree of bachelor of arts with a major in music a student must fulfill the requirements of both the Junior and Senior Colleges as stated on pages 20-25 of this bulletin. He must secure 144 credits in courses other than practical music (piano, voice, etc.). During the first two years, he should register for English A-B-C (Freshman English) or English 4-5-6 (Freshman Composition), unless exempt from the requirements in English (see page 9); foreign language (0 to 20 credits, as indicated on page 22); History 11-12-13 (Medieval History); Psychology 1-2 (General Psychology) and Psychology 4-5 (Introductory Laboratory Psychology); and the following courses in music: 1, 2, 3 (Ear Training); 4-5-6 (Harmony); 7-8 (Counterpoint); 34-35-36 (History of Music); 37-38-39 (Keyboard Harmony) for all students who major in organ or piano. At the end of the sophomore year he must take a comprehensive examination to insure that he is prepared for Senior College work. In the following two years he must complete one or two academic minors (see page 24), and earn from 27 to 30 credits in fields emphasizing one of the following branches of music: composition; history; normal piano (a training course in piano teaching). During the four years he must earn 30 credits in practical music. Special fees for courses in practical music are announced on page 7.

Entrance requirements, according to the instrument selected.—

Piano: Any major or minor scale in octaves, thirds, sixths, or tenths, in sixteenths at M.M., quarter note = 108; Bach Invention or dance from one of the suites; a sonata by Haydn or Mozart; a modern composition of equal difficulty with the sonata.

Voice: Sing on pitch with correct phrasing and musical intelligence standard songs in good English (the simpler classics recommended). Demonstrate ability to read a simple song at sight and have a knowledge of the rudiments of music. Have a promising voice. Some knowledge of piano is urgently recommended.

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

Violin: Major and minor scales, arpeggios; the simple Kreutzer Etudes; a sonata by Handel, Haydn, Mozart, or Schubert; a more modern work displaying special technique peculiar to the violin.

Organ: Same as for piano.

To register in the music course, a student must first pass an examination in practical music before a committee of the faculty of the Music Department. This applies also to academic students who wish to elect courses in practical music.

For more specific information as to required courses, consult the statement of the Department of Music in the University's *Combined Class Schedule*.

For a course in music education leading to the degree of bachelor of science in education and a teacher's certificate, see the Bulletin of the College of Education.

HONORS COURSE PLAN

A student who has met all the requirements for admission to the Senior College may be enrolled for the Honors Course upon the approval of the department in which he wishes to pursue his major study.

Each student enrolled in the Honors Course will be put under the immediate direction of a member of his major department of professional rank who shall be known as his tutor.

A part of the student's Senior College work will consist of reading or other individual studies done under the direction of his tutor. Work done in this way will be accepted as a substitute for a part or the whole of the major sequence and of the elective work of the usual curriculum.

A student electing this plan will be governed by the announcement of his major department and the direction of his tutor as to number of courses, attendance at classes, and general methods to be pursued.

The requirements for minor studies are not modified by this plan at present.

When the tutors of a department report at the end of any quarter that a student is not making satisfactory progress in the Honors Course, the student will be registered as a candidate in the regular course. In this case the tutors will report blanket credits equivalent to the work actually done. The student can then arrange to complete his major sequence either in the same department or in another.

For the year 1942-43 Honors Courses are offered by the Departments of Anthropology, Economics, English, Fine Arts, French, Latin, Political Science, Psychology, Sociology and Social Work, and Zoology.

GRADUATION HONORS

The degree B.A. may be awarded *cum laude*, *magna cum laude*, or *summa cum laude* upon the recommendation of the Committee on Honors.

Honors are awarded only to students who have a scholastic record of two honor points per credit in all work carried. A student who has this record will be awarded the degree B.A. *cum laude*.

Students who enter with advanced standing are eligible to become candidates for honors if they will have earned 75 credits of work in residence before graduation.

Students wishing to become candidates for the higher honors (*magna cum laude*, *summa cum laude*) must signify their intention not later than the beginning of the third quarter before graduation. Students are admitted as candidates upon the recommendation of the Senior College adviser with the approval of the Committee on Honors. The committee will not admit as a candidate a student who has limited his Senior College work to the minimum requirements in major and minor subjects.

With the approval of the Committee on Honors the candidate may pursue a course of reading in lieu of any or all elective courses. Near the close of the senior year the candidate will take a special examination which may touch upon any part of the field

of his college course. In this comprehensive examination the candidate should show (a) an acquaintance with the chief literature and sources of information in the fields studied, and (b) ability to discuss, with intelligence and clear reasoning, questions or problems upon which he has had opportunity to secure the necessary information. Such questions may be new to the student. The object is to test the student's ability to bring facts and theories to bear upon problems presented in the examination. The examination should be a test not of memory but of assimilation, of culture, and of power to command or use the knowledge which courses of study have put within the student's reach. Candidates who pass this examination will, upon recommendation of the committee, be awarded the degree B.A. *magna cum laude*.

A candidate whose standing in the comprehensive examination is satisfactory and who in addition presents an acceptable critical paper, a piece of creative work, or a thesis embodying the results of original research, will upon recommendation of the committee, be awarded the degree of B.A. *summa cum laude*. The preparation of the paper should be begun early in the senior year. All theses must be prepared in triplicate and turned in at the Senior College office not later than six weeks before graduation; for those graduating at the close of the spring quarter not later than May 1.

The degree of B.S. *cum laude* will be awarded to students who have an average of two honor points per credit in all their work.

Students may be accepted as candidates for the higher honors in courses leading to the B.S. degree and in combined arts and professional courses provided they present an equivalent of the work required for graduation honors in the general course leading to the B.A. degree.

COURSES IN THE GENERAL EXTENSION DIVISION

A student enrolled in the College of Science, Literature, and the Arts may take courses in the General Extension Division with permission of the Students' Work Committee; but the credits received in those courses will be counted as credits in this college only after the student has completed one year of work in the college.

A student who takes courses in the General Extension Division in classes in St. Paul, Minneapolis, or Duluth and wishes to count them toward a Bachelor's degree given by the College of Science, Literature, and the Arts must meet all curricular requirements of this college as stated in the bulletin. This means that:

- a. Before beginning work in the Senior College with a view to graduation, the student shall apply for Senior College standing and be enrolled by the assistant dean for the Senior College.
- b. He shall be assigned to a Senior College adviser and shall complete all the Senior College studies under the direction of the adviser.
- c. He shall complete any required work, either of major or minor sequences or of any other nature, in this college if it is not offered in the General Extension Division.
- d. He must observe any specific requirements which may be adopted hereafter, such as comprehensive examinations on either Junior College or Senior College work.

For the adjustment of irregularities in his curriculum the student will get advice from the assistant dean for the Senior College or from his major adviser.

A student who does not conform to these regulations may apply for standing in the Senior College on the same terms as a student transferred from some other institution.

Students who have not taken class work in one of the cities named must meet both curricular and residence requirements.

CREDIT IN THE GRADUATE SCHOOL

A student lacking not more than nine credits toward graduation may, upon petition, receive graduate credit for a limited amount of work taken as an undergraduate. No graduate credit will be given unless the student has made previous arrangements with the Graduate School. Courses taken for graduate credit will not carry credit toward the Bachelor's degree.

With the permission of the assistant dean for the Senior College, undergraduates lacking not more than nine credits toward graduation may be registered also in the Graduate School. Permission will be granted only in exceptional cases.

III. A COURSE IN LIBRARY TRAINING*

For the course in library training, leading to the degree of bachelor of science in the College of Science, Literature, and the Arts, a student must first complete satisfactorily three years of academic work. During his third year the student will elect work in this college, subject to the approval of the assistant dean for the Senior College. During these three years the student must secure at least 135 credits, and an average of one honor point per credit for all credits earned. (This number of credits required may be reduced by application of the "quality credit" rules given in paragraphs 30, 31, 32, on page 5.) At least 30 credits† must be in Senior College courses. The student must complete the requirements for admission to the Senior College, given on pages 21-23, and is subject to all the regulations which govern the work of other Arts students. He must complete his academic requirements before beginning the courses in Library Instruction.

For admission to the fourth year of this course the student must secure the written approval of the assistant dean for the Senior College of the College of Science, Literature, and the Arts.

During the fourth year a student will elect not less than 45 credits from courses given by the Division of Library Instruction, and must maintain an average of one honor point per credit for all the credits earned.

Training for Hospital Librarianship

Candidates for admission to this special course must have completed satisfactorily (1) at least three years of approved college work and at least two quarters of work in an approved library school or an equivalent of approved experience in hospital library work, and (2) the following courses or their equivalents: Preventive Medicine and Public Health 50 (Public and Personal Health, 3 credits); Psychology 1-2 (General Psychology, 6 credits); Psychology 144-145 (Abnormal Psychology, 6 credits); Sociology 1 (Introduction to Sociology, 5 credits); Sociology 49 (Social Pathology, 3 credits); Sociology 90 (Survey of Social Work, 5 credits); Zoology 1-2-3 (General Zoology, 10 credits). Students are not advised to register for less than the four courses in hospital librarianship, and no candidate for a certificate or degree will be excused from Hospital Library Practice. Opportunity for individual study of problems of special interest will be given as far as practicable. All prospective students who have not taken their preliminary work at the University of Minnesota must apply for admission to this University and must submit their credentials to the office of admissions and records of the University of Min-

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

† Thirty is the number usually required. For some students it may be reduced by special permission of the assistant dean for the Senior College.

nesota, Minneapolis, Minnesota. Since each application requires special consideration, early application is extremely desirable. It is expected that only those who are genuinely interested in work in hospitals, who are physically able to do such work, who are willing to accept positions in hospitals or similar institutions, and who have personal and educational qualifications for such will apply.

For admission to the Division of Library Instruction and to the course in Hospital Librarianship a special certificate must be secured from the assistant dean for the Senior College of the College of Science, Literature, and the Arts.

IV. A COURSE PRELIMINARY TO GRADUATE SOCIAL WORK*

Preparation for social work is offered only in the Graduate School, with admission limited to fifty beginning students each year. Such students will be admitted only in the fall or winter quarters. All students must meet the general requirements of the Graduate School. For full information regarding professional preparation for social work, see the Bulletin of the Graduate School and the special bulletin of the School of Social Work.

The following undergraduate course of study is recommended for those who desire to prepare for entrance to the School of Social Work. In order to plan the undergraduate work wisely, students are advised to consult with advisers in the offices of the Department of Sociology and Social Work early in their course. The organization of the course aims to give the undergraduate the fundamentals of a broad modern education.

This course of study supersedes the one announced in the bulletin of this college for 1939-40. Students who entered our Senior College before September, 1940, may finish their work by meeting either the old or the new requirements.

Students who were in our Junior College before September, 1940, may enter our Senior College under either the old requirements or the new, but they must do the work in the Senior College under the new.

JUNIOR COLLEGE

The work of the first two years, taken in the Junior College, consists of the regular academic requirements and fundamental courses in sociology, psychology, and political science. The requirements for admission to the Senior College are the same as those given under the headings *Required Courses and Distribution of Work* (pages 21-23) and *Amount and Quality of Work* (page 23).

The specific subject requirements for the first two years are as follows:

1. English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or exemption from the requirement. (See page 9.)
2. Foreign language, 0 to 20 credits according to the schedule given on page 22.
3. Ten credits† in one of the social sciences or 12 credits in Social Science 1f-2w-3s (Introduction to Social Science.) (See page 22.) It is recommended that economics be not chosen to meet this requirement since there will be an opportunity to take courses in that subject in the junior or senior year.
4. Ten credits† in one of the natural sciences or 15 credits in Natural Science 1f-2w-3s (Orientation in the Natural Sciences). (See page 22.) It is recommended that zoology or physiology be taken to meet this requirement.
5. Electives to make a total of at least 90 credits for the two years' work, with an average of one honor point per credit.

The following courses must be included in the two years' work outlined in Items 1-5:

Sociology 1 (Introduction to Sociology, 5 credits).

Sociology 49 (Social Pathology, 3 credits).

Political Science 1-2 (American Government and Politics, 6 credits).

Psychology 1-2 (General Psychology, 6 credits).

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

† Or 9 credits in a year course or 9 credits (6 semester credits) of advanced standing.

Recommended electives are: History 1-2-3 (European Civilization) or Philosophy 1, 2, 3 (Problems of Philosophy, Logic, Ethics); Speech 1-2-3 or 5-6 (Fundamentals of Speech) or Composition 27-28-29 (Advanced Writing).

SENIOR COLLEGE

The work of the junior and senior years is subject to the requirements of the course leading to the degree of bachelor of arts which are given under the headings *Senior College* and *Requirements for Graduation* on pages 23 and 24 with this exception:

The requirements of a major sequence and one or two minors (page 24) are replaced by the following interdepartmental sequence:

Sociology 53 (Elements of Criminology); 60 (Social Protection of the Child); 90 (Survey of Social Work); 101 (Social Organization); 114 (Rural Social Institutions).

Economics 82, 83, 84 (Competition and Monopoly in Modern Industry, The Inequality of Incomes, Comparative Economic Systems), unless the student has had Economics 6-7 (Principles of Economics), or its equivalent.

Psychology—at least six credits in Senior College courses, preferably Psychology 144-145 (Abnormal Psychology).

History 80-81-82 (Introduction to Economic History) or 83-84-85 (American Economic History) or six credits in Senior College courses in political science.

Philosophy 70 (Modern Philosophies of Social Reform).

Preventive Medicine—at least two Senior College courses.

Nine credits from the following courses in Sociology:

100. Social Psychology	120. Social Life and Cultural Change
102. Contemporary Penology	123. Methods of Social Research
103. Sociology of Conflict	146. Community Organization and the Social Setting of Recreation.
110. Rural Organization	160. Population Problems
115. Religion As a Social Institution	
119. The Family	

Electives to make the required total (normally 90 credits).

Students who are taking this course preliminary to Graduate Social Work may elect, and get credit for, a maximum of 18 credits in the following courses in Art Education and Physical Education which are ordinarily not open to Science, Literature, and the Arts students. This privilege is primarily for students preparing for graduate training in group work directed to leadership in recreation.

Art Education

31	Orientation in Handcraft Processes
73	Ceramic Materials and Processes
75B	Bookbinding Process
75M	Metal Work
76	Textile Materials and Processes
81A-B	Techniques of Puppetry

Physical Education for Men

56	Nature and Function of Play
79	Camp Craft and Camp Administration
136E	Leadership in Recreation
141	Administration and Supervision of Public Recreation
142	Group Leadership in Community Recreation

Physical Education for Women

23A-B	Games and Rhythms for Primary, Intermediate, and High School Grades
43	Tap and Ballroom Dancing
54	Camp Leadership
60	Principles of Play
63	Techniques of Teaching Folk Dancing
80	Principles of Rhythm

Satisfactory completion of four years' work of this curriculum leads to the degree of bachelor of arts.

V. COURSES PREPARING FOR ADMISSION TO THE PROFESSIONAL SCHOOLS

COURSES PRELIMINARY TO THE SCHOOL OF BUSINESS ADMINISTRATION*

To be eligible for admission to the School of Business Administration, the student must present ninety (90) credits, in addition to credits given for physical education, earned in a recognized college or university with one honor point per credit or a smaller number of earned credits which, together with quality credits, will total a minimum of ninety (90). One quality credit is granted for every five honor points in excess of one honor point per credit.

Quality credits earned in the Junior College may be applied only toward the ninety credits required for admission to the School of Business Administration. In other words, a student who has a surplus of honor points above the number required to complete ninety credits may not apply these for credit in the School of Business Administration. Any excess credits, however, other than quality credits, may be applied toward electives in the School of Business Administration.

The School of Business Administration offers courses leading to the degrees of *bachelor of business administration* and *bachelor of science in economics*. Students preparing to enter the school in pursuit of either of these degrees must satisfy prebusiness requirements as specified below.

A. Junior College Requirements for Admission to Sequences Leading to the Degree of Bachelor of Business Administration

1. English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or exemption from the requirement. (See page 9.)
2. Nine credits in mathematics or one of the following laboratory sciences: botany, chemistry, geology, physics, zoology, or psychology with laboratory.**
3. Nine credits in one of the following social sciences: geography, history, political science, or sociology†
4. Ten credits in Principles of Economics (Econ. 6-7).
5. Sufficient electives to complete the minimum of ninety (90) credits required for admission. The following courses should, if possible, be taken during the first two years, for most of them are prerequisites to certain courses in the core group:

Industrial History (Econ. 1)
 Industrial Production and Organization (Econ. 2)
 Elements of Money and Banking (Econ. 3)
 Elements of Statistics (Econ. 5)‡
 Elements of Accounting (Econ. 20)§
 Principles of Accounting (Econ. 25-26)

Students who do not elect the above courses in money and banking, statistics, and accounting during the freshman and sophomore years may substitute the following:

Money and Banking (B.A. 57)
 Statistics Survey (B.A. 70)
 Elementary Accounting: Combined Course (B.A. 54-55)

In addition certain courses are required in special sequences in the school. These course prerequisites should be included in the Junior College program wherever possible. The major sequences and special course prerequisites are as follows:

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

† Social Statistics (Soc. 45) not accepted in fulfillment of this requirement.

‡ Credit not granted in Econ. 5 to students who have had Social Statistics (Soc. 45).

§ Students who have had a high school course or experience in bookkeeping will be admitted to Econ. 25 by passing a placement test. For other students Elements of Accounting (Econ. 20) is a prerequisite to Econ. 25.

** Fifteen credits in Natural Science 1f-2w-3s (Orientation in the Natural Sciences), taken at the University of Minnesota, will be accepted as a substitute for 9 credits in mathematics or one of the several laboratory sciences.

1. Accounting: Mathematics of Investment (Math. 20), (prereq. Math. 8, or 6 and 7, or 15 and 16)
2. Advertising: General Psychology (Psy. 1-2)
3. Foreign Trade: General Psychology (Psy. 1-2); 9 credits in political science; reading knowledge of a foreign language
4. Finance: Mathematics of Investment (Math. 20), (prereq. Math. 8, or 6 and 7, or 15 and 16)
5. Industrial Administration: (See Bulletin of the Institute of Technology)
6. Insurance: General Psychology (Psy. 1-2); Mathematics of Investment (Math. 20), (prereq. Math. 8, or 6 and 7, or 15 and 16)
7. Merchandising: General Psychology (Psy. 1-2)
8. Personnel Management: General Psychology (Psy. 1-2)
9. Secretarial Training: General Psychology (Psy. 1-2); Secretarial Training: Typewriting (Econ. 32-33)‡
10. Department Store Training: General Psychology (Psy. 1-2); Secretarial Training: Typewriting (Econ. 32-33)‡
11. Office Management: General Psychology (Psy. 1-2); Secretarial Training: Typewriting (Econ. 32-33)‡

DISTRIBUTION OF COURSES

Of the required and elective courses in economics, Economics 1 and 2 which are strongly recommended but not required, belong in the freshman year; Economics 3 may be taken in the freshman year (to make with Economics 1 and 2 such a sequence as 1f-2w-3s), or may be taken later; Economics 5, 6-7 and 20, 25-26 belong in the sophomore year, but students are permitted to take Economics 20 when they are third quarter freshmen.

Of the courses taken to meet the requirements of (1) English, (2) social science, (3) mathematics or laboratory science, freshmen should take at least two and thus leave not more than one for the sophomore year. To meet the third of these requirements, students who intend to specialize in accounting, banking, or statistics should take mathematics instead of natural science. Indeed, mathematics is recommended for all students planning to enter the School of Business Administration, either as a subject to meet this requirement or as an elective.

Courses in English, mathematics, all the laboratory sciences, and two of the social sciences (history and political science) are open to freshmen. See the list of "Studies for Freshmen" on page 10.

Of other courses recommended above, in Items 1-11, Psychology 1-2 (General Psychology) belongs in the sophomore year; Economics 32-33 (Typewriting) may be taken as early as the student's first quarter in college, with the instructor's permission; foreign language, which is required in the foreign trade sequence, may be taken as early as the beginning of the freshman year.

B. Junior College Requirements for Admission to Sequences Leading to the Degree of Bachelor of Science in Economics

Economics Sequence	Credits
English (Comp. 4-5-6 or English A-B-C).....	9 or 15
Mathematics	10
Elements of Money and Banking (Econ. 3)*.....	5
Principles of Economics (Econ. 6-7).....	10
Elements of Statistics (Econ. 5)*§.....	5
Political Science or History	9
Philosophy (Philosophy 1 or 2).....	5
Additional mathematics or laboratory science.....	10
Electives	27 or 21
	90

* Students who do not elect the above courses in money and banking, statistics, and accounting during the freshman and sophomore years may substitute the following: Money and Banking (B.A. 57); Statistics Survey (B.A. 70); Elementary Accounting; Combined Course (B.A. 54-55).

‡ A laboratory fee of \$2.50 will be required of students who register for one or more of the courses in secretarial training.

§ Credit not granted in Econ. 5 to students who have had Social Statistics (Soc. 45).

	Credits
Statistics Sequence	
English (Comp. 4-5-6 or English A-B-C)	9 or 15
Trigonometry (Math. 6)	5
College Algebra (Math. 7)	5
Analytic Geometry (Math. 30)	5
Elements of Money and Banking (Econ. 3)*	5
Principles of Economics (Econ. 6-7)	10
Elements of Statistics (Econ. 5)*§	5
Political Science or History	9
Philosophy (Philos. 1 or 2)	5
Additional mathematics	5
Elements of Accounting (Econ. 20)*¶	3
Principles of Accounting (Econ. 25-26)*	6
Electives	18 or 12
	—
	90

TWO-YEAR PREDENTAL COURSE†**

The two-year predental course required for admission to the School of Dentistry is a part of the six-year course in dentistry leading to the degree of doctor of dental surgery. During the two years of prescribed work students are registered in this college and subject to its regulations. It is desirable that students should have had chemistry and higher algebra in high school. The required courses are listed below:

1. Inorganic Chemistry 1-2-11 or 4-5-11 or equivalent (General Inorganic Chemistry and Qualitative Chemical Analysis, 12 credits)
2. Organic Chemistry 1-2 (Elementary Organic Chemistry, 8 credits)
3. English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or exemption from the requirement. (See page 9.)
4. Physics 1a-2a-3a (Introduction to Physical Science, with laboratory included, 12 credits) or Physics 1-2-3 (Introduction to Physical Science, without laboratory, 9 credits). The 12-credit course, with laboratory, is recommended.
5. Zoology 1-2-3 (General Zoology, 10 credits)
6. Drawing, economics, history, Latin or a modern language (high school or college), political science, psychology, sociology, and speech are recommended as electives to make up a total of 90 quarter credits. (For each five honor points in excess of one honor point per credit, the number 90 is diminished by one.)

It is recommended that the two years' work be distributed as follows:

First year.—Chemistry 1-2-11 or 4-5-11 (12 credits); English 4-5-6 (9 credits) or English A-B-C (15 credits); Zoology 1-2-3 (10 credits); one or more elective courses.

Second year.—Organic Chemistry (8 credits); Physics 1-2-3 or 1a-2a-3a (9 or 12 credits); elective subjects to make a total of 90 credits for the two years' work.

COURSES PRELIMINARY TO THE COLLEGE OF EDUCATION

All students who desire to receive a state teacher's certificate upon graduation from the University of Minnesota must be graduates of the College of Education. In most cases students register in that college at the beginning of their junior year. In certain special four-year and five-year curricula, however, they should register in the College of

* Students who do not elect the above courses in money and banking, statistics, and accounting during the freshman and sophomore years may substitute the following: Money and Banking (B.A. 57); Statistics Survey (B.A. 70); Elementary Accounting; Combined Course (B.A. 54-55).

† For the three-year predental course, which is a part of the seven-year course in Arts and Dentistry, see page 50.

§ Credit not granted in Econ. 5 to students who have had Social Statistics (Soc. 45).

¶ Students who have had a high school course or experience in bookkeeping will be admitted to Econ. 25 by passing a placement test. For other students Elements of Accounting (Econ. 20) is a prerequisite to Econ. 25.

** For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

Education at the beginning of their freshman year or as soon thereafter as they have made their curriculum choice. The special four-year curricula are:

Art Education	Music Education
Elementary Education	Physical Education for Men
Industrial Education	Physical Education for Women
Kindergarten, Primary, and Nursery School Education	

Special five-year curricula leading to the degree of master of education are in the following fields:

Agricultural Education	Music Education
Art Education	Physical Education for Men
Elementary Education	Physical Education for Women
Home Economics Education	Rural Education
Industrial Education	

In curricula for Agricultural and Home Economics Education the preliminary work is done in the College of Agriculture, Forestry, and Home Economics. (See the bulletin of that college or the Bulletin of the College of Education.) In curricula for Nursing Education and Public Health Nursing the student is registered for five quarters in the College of Science, Literature, and the Arts, and in the School of Nursing for two and a half years. After that she registers for three quarters in the College of Education or in the Medical School. (See page 40.)

For all other general and special curricula the prescribed work of the first two years is done in the College of Science, Literature, and the Arts.

The following general requirements apply to all students entering the College of Education at the beginning of their junior year:

1. A minimum of 93 credits for men and 95 credits for women, carried with an average of one honor point per credit. (For each five honor points in excess of one honor point per credit, the number 93 or 95 is diminished by one.) For men 3 of these credits and for women 5 credits shall be in physical education. (No credit is granted for physical education courses by the College of Science, Literature, and the Arts;* but upon transfer to the College of Education, the student will receive the credits and honor points earned in those courses.)

2. The student must have completed 6 credits in General Psychology.

3. **Health education.**—All students in the College of Education, before graduation, are required to take a sequence of courses in (a) personal health, (b) community health, and (c) school health; but students will be exempted from either or both of the first two requirements on the basis of knowledge shown through placement tests. The number of credits will depend upon possible exemptions and the sequence of courses chosen. A minimum of six credits covering all three fields is required unless students are exempted from (a) and (b).

Junior College courses which may be taken to meet the requirements in personal health are as follows: Preventive Medicine and Public Health 3 (Personal Health, 2 credits); Preventive Medicine and Public Health 4 (Health Problems of Adult Life, 2 credits); General College 10C (Human Biology). The course Preventive Medicine and Public Health 50 (Public and Personal Health, 3 credits) will meet the requirements of (a) and (b).

4. At the time of entrance to the College of Education a student must present a certificate from the Students' Health Service indicating that he is free from physical defects that would prevent the successful pursuit of educational work.

* This has been the rule, but during the war the college will give one credit per quarter to men for the course called "Sports Education."

5. Before entrance to the College of Education each student will be given a general examination designed to show his capacity to pursue professional curricula in education.

*Curricula Which Include Preliminary Work in the College of
Science, Literature, and the Arts*

1. A GENERAL COURSE PRELIMINARY TO THE COLLEGE OF EDUCATION WITH
MAJORS AND MINORS IN ACADEMIC SUBJECTS*

Students preparing to teach academic subjects in senior high schools and to qualify for the state high school standard certificate must have one major and one or more minors in subjects taught in high schools. The College of Education offers majors and minors in the following fields: English, speech, journalism; German, Latin, French, Scandinavian, Spanish; geography, history, political science, sociology; botany, chemistry, physics, zoology; mathematics. The specific requirements for the different majors and minors are given in the Bulletin of the College of Education and in the departmental statements in the University's *Combined Class Schedule for 1942-43*. Special combinations of majors and minors are provided in the natural science and social studies curricula.

The selection of suitable majors and minors and the most desirable combinations of subjects is very important in securing a high school teaching position. The College of Education has prepared a bulletin showing the demands for teachers in the various types of work, the fields of high school teaching in which there are the best prospects for securing positions, the best combinations of majors and minors, the personal and scholastic qualifications a prospective teacher should have, and other facts which may affect the choice of vocation or the choice of curriculum. Students are urged to secure a copy of this bulletin and to consult an adviser in the College of Education as early in their course as possible.

Before entering the College of Education the student must meet certain specific requirements in addition to those listed above. These requirements do not apply to the special four-year and five-year curricula.

1. The credits presented for entrance, exclusive of credits in physical education, must be earned in the following groups of college courses:

Group A English

Group B Foreign languages: German, Greek, Latin, Romance Languages, Scandinavian

Group C Social sciences: Anthropology, Economics, Geography, History, Political Science, Sociology

Group D Natural sciences: Astronomy, Botany, Chemistry, Geology and Mineralogy, Physiology, Physics, Psychology, Zoology

Group E Mathematics

Group F Journalism, Fine Arts, Speech, or such other courses in other colleges or departments of the University as are approved by the College of Education

2. Within the general requirements listed above the student during his high school and Junior College years must have completed the required work indicated under A, B, C, and D below. At least 20 credits in Groups B, C, and D must be completed in college.

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

Subject	In High School	In College
A. English	3 years	and 9 credits in composition
B. Language*	3 years in one language	or 20 credits in one language
	or	
	2 years in one language	and 10 credits in same language
	or	
	1 year in one language	and 15 credits in same language
C. Social sciences	2 years	or 10 credits† in one department‡
D. Natural sciences	2 years	or 10 credits† in one department‡

NOTE.—In lieu of the specific course requirements indicated in the language group a student may take a comprehensive examination in an elected language to be conducted by a committee appointed by the dean of the College of Education.

3. Within the total credits stipulated under paragraph 1 a student must meet, in fields of study which are represented in prevailing high school curricula, the following requirement: at least 15 credits in a major field and at least 10 credits in each of two minor fields. The purpose of this requirement is to prepare the student for the study of advanced courses necessary to the completion of satisfactory teaching majors and minors.

II. COURSES PRELIMINARY TO THE FOUR- AND FIVE-YEAR SPECIALIZED CURRICULA IN THE COLLEGE OF EDUCATION

The College of Education, in its undergraduate and graduate curricula, provides training for many different kinds of educational work; for positions as superintendents of schools, high school and elementary school principals, elementary school supervisors, teachers in normal schools and teachers colleges, educational counselors, school psychologists; teachers of special subjects and of special classes; school librarians; visiting teachers; positions in junior high schools, elementary schools, kindergartens, nursery schools, public health nursing, nursing education, recreational leadership, and school health work. In all cases except the special four-year and five-year curricula previously mentioned the preliminary work is done in the College of Science, Literature, and the Arts. The Junior College work, however, is selected to meet the professional needs, and specific courses are required. The student should consult the Bulletin of the College of Education for the requirements of his curriculum and should confer with the adviser for that curriculum early in his course.

The specialized curricula offered by the College of Education based upon two years' work in the College of Science, Literature, and the Arts are:

Commercial Education	Social Studies
Library Methods	Speech Pathology
Natural Sciences	Teachers of Subnormal Children
Recreational Leadership	Visiting Teachers

Credits earned in required courses in Art Education, Industrial Education, and Physical Education will be granted upon transfer to the College of Education.

Professional training for administrative and supervisory positions, the teaching of professional subjects, positions as school counselors and school psychologists, and for other specialized work is secured by taking a fifth year in the Graduate School with a major in some field of education.

* For students who enter this University with advanced standing, the number of credits required may be less than that indicated in this schedule. Any course of 9 credits (6 semester credits) may be substituted for the corresponding 10-credit course here.

† Or 9 credits in a year-course or 9 credits (6 semester credits) of advanced standing.

‡ Fifteen credits in Natural Science 1f-2w-3s (Orientation in the Natural Sciences) will be accepted as a substitute for 10 credits in one natural science.

§ Twelve credits in Social Science 1f-2w-3s (Introduction to Social Science) will be accepted as a substitute for 10 credits in one social science.

III. COURSE PRELIMINARY TO NURSING EDUCATION AND PUBLIC HEALTH NURSING IN THE COLLEGE OF EDUCATION AND IN THE MEDICAL SCHOOL*

For the first five quarters of the five-year curriculum in Nursing Education and Public Health Nursing the student is registered in the Junior College. She must complete the requirements listed below, and must earn an average of one honor point per credit.

- English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or exemption from the requirement. (See page 9.)
- Sociology 1 (Introduction to Sociology, 5 credits).
- Psychology 1-2 (General Psychology, 6 credits).
- Child Welfare 40 (Child Training, 3 credits). This course is also offered on the University Farm campus as Home Economics Education 90.
- Controlled electives—Any three of the following courses:
- Preventive Medicine and Public Health 3 (Personal Health, 2 credits).
 - Physiology 51§ (6 credits) or Physiology 2 or 4§ (4 credits). See the outline below for the preferred course.
 - Home Economics 30 or 31 (Introduction to Nutrition, 2 or 3 credits).
 - Sociology 49 (Social Pathology, 3 credits).
 - Anatomy 3 (Elementary Human Anatomy, 3 credits).
 - Bacteriology 101-102§ (Medical Bacteriology, 9 credits) or Bacteriology 53§ (General Bacteriology, 5 credits) or Bacteriology 1 (Elements of Bacteriology, 4 credits). See the outline below for the preferred course.
 - Physiology 50§ or 1 (Physiological Chemistry, 4 credits).
- Electives, exclusive of courses in physical education, to make a total of 75 credits for the work of the five quarters. (For each five honor points in excess of one honor point per credit, the number 75 is diminished by one.) The student's first choice of electives should include Zoology 1-2-3 (General Zoology, 10 credits); Chemistry 1-2 or 4-5 or 6-7 (General Inorganic Chemistry, 8 or 10 credits); 10 credits in social science. Other recommended electives are Philosophy 3 (Ethics, 5 credits); Anthropology 40 and 41 (Introduction to Anthropology, 5 credits each); Anthropology 42 (The Growth of Cultures, 5 credits); and Zoology 22 (Comparative Anatomy, 5 credits).
- Physical Education, six quarters (5 credits). One quarter of this requirement may be completed after registering in the School of Nursing. No credit is granted for physical education courses in the College of Science, Literature, and the Arts; but upon transfer to the College of Education, the student will receive the credits and honor points earned in those courses.

A suggested two-year sequence of required and elective courses, with the preferred courses in physiology and bacteriology, is as follows:

First Year

<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
English 4f or Af	English 5w or Bw	English 6s or Cs
Chemistry 1f or 4f or 6f	Chemistry 2w or 5w or 7w	Sociology 1s
Zoology 1f	Zoology 2w	Zoology 3s
Preventive Medicine and Public Health 3f	Preventive Medicine and Public Health 3w	Anatomy 3s
Physical Education	Physical Education	Physical Education
Electives¶	Electives¶	Electives¶

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

§ These courses prerequisite Zoology 1-2-3 and two quarters of inorganic chemistry; Physiology 51 prerequisite, in addition, Physiology 50 and anatomy.

¶ Electives should be chosen to make on the average a program of 15 credits per quarter in addition to physical education. Social science should be chosen in the freshman year if possible.

Second Year

<i>Fall</i>	<i>Winter</i>	<i>Spring</i> §
Psychology 1f	Psychology 2w	Sociology 49s
Physiology 50f	Physiology 51w	Bacteriology 102s
	Bacteriology 101w or 53w	
Physical Education	Physical Education	Physical Education
Electives*	Electives*	Child Welfare 40s or Home Econ. Educ. 90s Home Economics 30s or 31s History of Nursing 1s Nursing 12s

Upon completion of the above requirements the student registers in the School of Nursing for two and a half years. After that she registers for three quarters (1) in the College of Education, with a major in nursing education, or in public health nursing combined with health education or (2) in the Medical School, with a major in public health nursing. For information about nursing subjects see the Bulletin of the School of Nursing.

COURSE PRELIMINARY TO THE LAW SCHOOL¶

Students in the University preparing to enter the Law School register in the College of Science, Literature, and the Arts. Ninety credits of academic work are required for admission to the Law School. An average of at least one honor point for all credits earned up to the time of admission is also required. Excess honor points do not reduce the number of credits required.

Before trying to plan their college course preliminary to the Law School, students should read carefully the statements about the combined courses in Arts and Law and in Business Administration and Law on pages 48-49.

The following course has been outlined by the faculty of the Law School for the two years of college study required:

1. English A-B-C† (Freshman English, 15 credits) or English 4-5-6† (Freshman Composition, 9 credits)
2. Philosophy 1, 2, 3 (Problems of Philosophy, Logic, Ethics, 15 credits)
3. Political Science A-B-C (Introduction to Government, 9 credits)
4. Economics 6-7 (Principles of Economics, 10 credits)
5. History 70-71-72 (English Constitutional History, 9 credits)
6. Psychology 1-2 (General Psychology, 6 credits)
7. Economics 27 (Accounting Survey, 5 credits)**
8. Electives to make the total at least 90 credits. Foreign language (0 to 20 credits according to the schedule given in paragraph 1B on page 22) and natural science (10 or 15 credits as indicated in paragraph 1D on page 22) should be included in these electives by students taking the combined course leading to the degrees of bachelor of arts and bachelor of laws which is outlined on page 48. Such students may take Philosophy 50 and 50A, 52 and 52A (courses in the general history of philosophy) instead of Philosophy 1 and 3. Other suggested electives are: English History or American History or European Civilization, Economics, Modern Philosophies of Social Reform (Philosophy 70), Political Science, Sociology, and Speech.

It is recommended that the two years' work be distributed as follows:

First year.—English 4f-5w-6s (9 credits) or English Af-Bw-Cs (15 credits); Philosophy 2f-1w-3s (15 credits); Political Science Af-Bw-Cs (9 credits); History 4f-5w-6s (English History, 9 credits)

* Electives should be chosen to make on the average a program of 15 credits per quarter in addition to physical education. Social science should be chosen in the freshman year if possible.

† If a student takes English 4-5-6 rather than English A-B-C, or if he omits Freshman English composition because he is exempted from that requirement, the Law School recommends that he get at least six credits in more advanced courses offered by the Department of English.

§ During the spring quarter of the sophomore year the student should be registered in the School of Nursing.

¶ For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

** This course in accounting is a special course for prelaw students. It is not open to students who have had Economics 20 (Elements of Accounting, 3 credits). Students who have taken that course may get more work in accounting by taking Economics 25-26 (Principles of Accounting, 3 credits per quarter).

which is not required but is recommended as an elective course in preparation for English Constitutional History.

Second year.—Economics 6f-7w, 27s (15 credits); History 70f-71w-72s (9 credits); Psychology 1f-2w (6 credits); elective courses to make a total of 90 credits for the two years' work.

The specific subjects listed above are not required for *admission* to the Law School or for the nonprofessional degree of bachelor of science in law; but, except in case of students who have a college degree when they begin the study of law, they (or substitutes approved by the dean of the Law School) are required for the professional degree of bachelor of laws. Candidates for the latter degree who lack any of these subjects and do not have a college degree when they enter the Law School must take them before beginning their third year in the Law School. They cannot be carried along with the law course, but may be taken in Summer Session.

COURSE IN MEDICAL TECHNOLOGY*

The Course in Medical Technology is a four-year course given in the College of Science, Literature, and the Arts and in the Medical School. The degree of bachelor of science is awarded upon completion of the prescribed curriculum.

During the first two years the student is registered in this college and must earn 90 credits with an average of one honor point per credit. (For each five honor points in excess of one honor point per credit, the number 90 is diminished by one.) The total number of honor points received in the following required subjects must at least equal the number of credits in those courses: English, chemistry, physics, zoology, anatomy, histology, bacteriology. After the satisfactory completion of the requirements the student is transferred to the Medical School for her junior year. The entire fourth year of twelve months is spent in a rotating practical service in the laboratories of the University Hospitals or affiliated hospitals. An additional six months for training in X-ray technique may be elected by the student.

The following courses or their equivalents must be completed before the student will be admitted to the junior year:

English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or exemption from the requirement. (See page 9.)

Chemistry 1-2-11 or 4-5-11 (General Inorganic Chemistry and Qualitative Chemical Analysis, 12 credits); Analytical Chemistry 7 (Quantitative Analysis, 4 credits); Organic Chemistry 1-2 (Elementary Organic Chemistry, 8 credits).

Zoology 1-2-3 (General Zoology, 10 credits) and Zoology 21 (Histology, 5 credits).

Anatomy 3 (Elementary Human Anatomy, 3 credits).

Physics—A minimum of 5 credits in general physics. Physics 1-2-3 (Introduction to Physical Science, 9 credits) is required of students who will take any courses in X ray. It is advised for all students. Physics 1-2 (6 credits) without Physics 3 may be taken to meet the minimum requirement. In some instances special permission will be granted to students who will not take any courses in X ray to substitute one unit of high school physics for this requirement. Students who may subsequently study medicine in the regular medical course should take Physics 4-5-6 and the prerequisite mathematics. See the requirements in the premedical course on page 51.

Bacteriology 53 (General Bacteriology, 5 credits) or Bacteriology 101 (Medical Bacteriology, 5 credits).

Electives to make a total of 90 credits for the two years' work. There is no essential limitation to the subjects which may be chosen as electives. However, since it would be unwise for a student to take a wide variety of elective subjects without proceeding beyond the first and elementary courses, it is advised that in the first two years the student elect introductory courses in subjects which she expects to continue in her junior year. A program which includes only scattered electives will not be approved.

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

Students who have not had higher algebra in high school may find it helpful to take it in their freshman year in college. Courses in social sciences are recommended. Students who may study medicine or do graduate work should take German to meet requirements.† It is advised that in any case the student include two years of a foreign language in her high school curriculum and that she continue that language at the University for at least two quarters so that she will have the equivalent of 20 credits of a language begun in college. (For example: 2 years of high school German and German 3-4 (10 credits) is the equivalent of German 1-2-3-4 in college.)

Recommended electives are listed in the Bulletin of the Course in Medical Technology.

NOTE.—English, chemistry, and general zoology should be taken in the freshman year.

For work in the Medical School consult the Bulletin of the Course in Medical Technology obtainable at the office of admissions and records.

Arrangements for obtaining further information, particularly in connection with transfers from other colleges, may be made by calling the Main Laboratory, University Hospitals (Telephone: Main 8551). It may be necessary for transfer students to take courses during the Summer Session.

Advisers.—During the freshman year students in this course may consult advisers in the Junior College office (Room 106, Folwell Hall). During Freshman Week they should also register their names in the Main Laboratory, University Hospitals. After their freshman year they must submit their registration for approval to special advisers in that laboratory.

VI. COURSES WITH SPECIAL TRAINING IN MILITARY AND NAVAL SCIENCE AND TACTICS*

A student who wants special training in Military or Naval Science and Tactics as part of a four-year college course may take the special curriculum which is outlined on page 45 or he may take basic and advanced courses in military or naval science and tactics as a part of his work in some other four-year course of study. The extent to which credits in those courses will be accepted as elective credits in other curricula given in this college is stated in the following paragraphs under the separate headings *Military Science and Tactics* and *Naval Science and Tactics*.

MILITARY SCIENCE AND TACTICS‡

The University of Minnesota, like all major schools in the nation, provides a four-year course in military science and tactics designed to qualify outstanding male students of the University for appointment in the Officers' Reserve Corps, Army of the United States. Courses of instruction in the following branches of the Army are offered: Coast Artillery (Anti-aircraft), Signal Corps, and Medical Corps. Physically qualified students in the College of Science, Literature, and the Arts may register for courses in the Coast Artillery Corps. These courses are elective, and the total of twenty-four credits apply towards a degree in any course of study given entirely within this college. The four-year program is split into two parts, basic and advanced. The Basic Course consists of six quarters of three hours of work per week, for one credit per quarter. Upon completion of the Basic Course, a student whose academic average is "C" or above is eligible to apply for the Advanced Course. A limited number of students are recom-

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

† Medical German (30-31-32 or 33-34) and its prerequisites (German 1, 2, 3 or equivalent) are required in the premedical curriculum. (See page 51.)

‡ For a special four-year course of study with a major in military or naval science and tactics, see page 45.

mended to the president of the University by the professor of military science and tactics for the Advanced Course each year. Those students who are approved by the president of the University are admitted to the advanced course of instruction. This course consists of six quarters of five hours of classroom work per week, for which three credits per quarter are offered.

Students enrolled in the Advanced Course are furnished a regulation officer's uniform and receive from the Federal Government a fixed stipend per day while pursuing this course. Those students who successfully complete the ROTC Advanced Course, if recommended by the president of the University and by the professor of military science and tactics are sent to a coast artillery school (Fort Monroe, Virginia, or Camp Davis, North Carolina) for ten weeks of practical instruction with coast artillery weapons (anti-aircraft, railway, tractor drawn and fixed). Those students who successfully complete the course of instruction at a coast artillery school are commissioned second lieutenants in the Officers' Reserve Corps, the Army of the United States. A limited number of permanent (officers') commissions are available each year to outstanding second year Advanced Course students in both the U.S. Army and the Marine Corps. The total compensation for the two years of Advanced Course work amounts to over \$200. Officers trained in Minnesota's Army are now on duty in all parts of the United States, its foreign possessions, and other parts of the world.

NAVAL SCIENCE AND TACTICS*†

The Naval Reserve Officers' Training Corps of the University of Minnesota provides a four-year course for selected, physically qualified male students. A student who completes this course is eligible for a commission as ensign, United States Naval Reserve, ensign, Supply Corps, United States Navy, or as second lieutenant, United States Marine Corps Reserve, provided he applies for the commission, obtains a degree from the University, is recommended by the professor of naval science and tactics, and passes the prescribed physical examination. If the graduate is commissioned as ensign, U.S.N.R., he may, upon graduation, apply for one year of active duty at sea, upon completion of which he may be permitted to take an examination for a commission as an ensign in the regular line of the Navy, provided he is recommended by his commanding officer and is less than twenty-six years of age on June 30 of that year.

Cruises on board battleships, cruisers, and destroyers are held in the Atlantic and Pacific during the summer months of each year. As a prerequisite to a commission, a cruise is required of all students upon completion of the third year of the course, but all Naval R.O.T.C. students are eligible for a cruise each summer.‡

The course is divided into two groups, Navigation and Naval Science, the latter being further divided into two parts: the Basic Course consisting of the work of the first two years and requiring one hour of drill and two hours of classroom work per week; and the Advanced Course consisting of the work of the last two years and requiring one hour of drill and three hours of classroom work per week.

The Navigation Course requires three hours of classroom work per week. It is covered in three quarters at the convenience of the student but should be completed during the Basic Course.

Credits for the summer cruises are given in the amount of $\frac{3}{4}$ credit for each two weeks of cruise work. These credits are in excess of degree requirements and do not reduce the number of credits required for a degree.

* For students who desire to include the courses in Navigation and Naval Science as a part of their work for a degree in any course of study given entirely within this College of Science, Literature, and the Arts, the total number of credits required will be 186 of which 36 will be for Navigation 1-2-3 and Naval Science 1-2-3, 4-5-6, 51-52-53, 54-55-56.

† For a special four-year course of study with a major in military or naval science and tactics, see page 45.

‡ During war or a national emergency the foregoing routine as to cruises may be modified.

Naval Science and Navigation credits (not cruise) are accepted as fulfilling the requirements for a degree. For the Basic Course, $1\frac{1}{2}$ credits per quarter are allowed—a total of $4\frac{1}{2}$ credits for each of the two years. For the Advanced Course, 3 credits per quarter are allowed—a total of 9 credits for each of the two years. For the Navigation Course, 3 credits per quarter are allowed—a total of 9 credits for the course.

Uniforms and equipment are furnished to students by the government without charge. All textbooks used are loaned to the student. All Naval R.O.T.C. students attending cruises are furnished transportation and subsistence. Students enrolled in the Advanced Course are paid monthly commutation of subsistence by the Navy Department, and cruise pay on the Advanced Course cruise. The total pay received from the government amounts to about one hundred ninety dollars (\$190) for the two years in the Advanced Course.

All prospective candidates for the Naval R.O.T.C. *must* apply in person to the professor of naval science and tactics, University of Minnesota, before registering for the course, as enrolments are limited by law and a prescribed physical examination must be taken before the candidate can be considered. After a student is once enrolled in the Naval R.O.T.C., legal arrangements can be made to permit him to continue his college course without interruption.

NAVIGATION

Navigation courses given by the Department of Naval Science and Tactics are open to all university students.

Navigation 1f or 1s. Elementary Navigation and Piloting. Fundamental principles of astronomy underlying navigation of ships and aircraft, charts, piloting, compasses, compensation of magnetic compass error, dead reckoning. Three hours per week for one quarter. (3 cred.; prereq. plane trigonometry.)

Navigation 2f or 2w. Celestial Navigation. Lines of position, the sextant, the astronomical triangle, time and the chronometer, marine surveying, star identification. Three hours per week for one quarter. (3 cred.; prereq. Navigation 1f or 1s.)

Navigation 3w or 3s. Deep Sea and Aerial Navigation. Determination of lines of position of sun, moon, stars, and planets. Short tabular methods. The navigator's day's work at sea. Chart work and practical problems. (3 cred.; prereq. Navigation 2f or 2w.)

FOUR-YEAR COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE WITH A MAJOR IN MILITARY OR NAVAL SCIENCE AND TACTICS*†

The general purpose of this curriculum is to enable students to attain the ends of a higher liberal education and at the same time to study those subjects which will best qualify them for officers' commissions in the Army, Navy, or the Marine Corps.

The course requires those subjects in mathematics, physical science, and engineering which are necessary for well-trained junior officers in the armed forces and it allows students the privilege of extending their knowledge into the fields of economics, history, and political science which are essential for an understanding of the modern world in peace and in war and are highly desirable for officers in all grades of the armed forces.

The requirements are in two groups as follows:

Requirements—Group I

1. English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or exemption from the requirement. (See page 9.)
2. Chemistry: Inorganic Chemistry 1-2-11 or 4-5-11 (General Inorganic Chemistry and Qualitative Analysis, 12 credits) and Organic Chemistry 1-2 (Elementary Organic Chemistry, 8 credits).

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule* or the *Bulletin* of the Institute of Technology.

† Before deciding to take this special four-year course of study, students should read the statements about Military and Naval Science and Tactics which are on pages 43-45.

3. Mathematics: Course 6-7*30 (Trigonometry, College Algebra, Analytic Geometry, 15 credits; prerequisite, high school higher algebra* or equivalent); and Course 50-51 (Differential and Integral Calculus, 10 credits; prerequisite, Analytic Geometry).
4. Physics 7-8-9 (General Physics, 15 credits). This course cannot be taken until after the student has had Math. 30 (Analytic Geometry) and has had or is taking Math. 50-51 (Differential and Integral Calculus).
5. Military Science and Tactics 1-2-3 and 4-5-6 (First and Second Year Basic Course, 6 credits) or
Naval Science and Tactics 1-2-3 and 4-5-6 (First and Second Year Basic Courses, 9 credits).
6. Engineering Drawing 1-2 (6 credits; prerequisite, high school solid geometry† or equivalent).
7. Mechanical Engineering: Course 19 (Machine Shop Practice, 2 credits), which is open to freshmen in the spring quarter; and Course 50, Auto and Airplane Engines, 3 credits), which is open to sophomores but not to freshmen.
8. Civil Engineering 17 (Surveying, 3 credits; prerequisite, trigonometry and college algebra), for students of Military Science and Tactics
or
Navigation 1-2-3 (Elementary Navigation and Piloting, Celestial Navigation, Deep Sea and Aerial Navigation, 9 credits; prerequisite, trigonometry), for students of Naval Science and Tactics.
9. Social Science: At least 9 credits in economics, geography, history, political science, or sociology; or Social Science 1-2-3 (Introduction to Social Science, 12 credits).§
10. Foreign language: German, French, or Spanish (preferably German), 0 to 20 credits, according to the following schedule:¶

<i>Amount Presented for Entrance</i>	<i>Amount Required in Junior College</i>
Four years of one language	None
Three years of one language	5 credits in same language
Two years of one language	10 credits in same language
One year of one language	15 credits in same language
Less than a year of one language	20 credits in one language

This means, for each of the languages, the equivalent of Courses 1, 2, 3, 4. In German, Course 45-46-47 (Military and Naval German, 9 credits) is recommended as a substitute for Course 3-4 (10 credits).

11. Physical Education: Courses in "Sports Education" and other courses offered by the Department of Physical Education for Men are not required in this curriculum. But it is strongly recommended that students take them regularly throughout their four years in college. During the war, one credit per quarter, up to a maximum of six credits, will be given for "Sports Education."

There are more requirements in this Group I than can ordinarily be met in two years. Organic Chemistry and either social science or foreign language may be postponed without special permission. But a student who has begun a foreign language in high school and wants to continue it should do so in his freshman year. Students may postpone some of the other courses with the consent of their advisers.** Some students may be able to take elective courses in their freshman and sophomore years.

At the end of the sophomore year, a student should have at least 90 credits†† and an average of one honor point per credit. After he has met that requirement he should register in the Senior College.

* Students who have not had this prerequisite must take Math. 1 (Higher Algebra, 5 credits) in college.

† Students who have not had this prerequisite must take Math. 14 (Solid Geometry, 3 credits) in college.

§ This is a new course which will be offered for the first time in 1942-43.

¶ For students who enter this University with advanced standing, the number of credits required may be less than that indicated in this schedule. Any course of 9 credits (6 semester credits) may be substituted for the corresponding 10-credit course here.

** To be assigned to advisers, students should go to the offices of the Departments of Military and Naval Science and Tactics in the Armory.

†† This required total may include "quality credits." See paragraphs 30, 31, 32 on page 5.

Requirements—Group II

12. Military Science and Tactics 151-152-153 and 154-155-156 (First and Second Year Advanced Courses, 18 credits).
or
Naval Science and Tactics 51-52-53 and 54-55-56 (First and Second Year Advanced Courses, 18 credits).
13. Fifteen credits in Senior College courses in one department, or nine credits in Senior College courses in each of two departments, chosen from the following: Chemistry, Economics, History, Mathematics,† Physics, Political Science.
14. Elective courses, chosen with the approval of the student's adviser, to make a total of at least 180 credits§ for the four-year course.
15. An average of one honor point per credit for the work of the whole course.

VII. SIX-YEAR COURSE IN ARTS AND ARCHITECTURE LEADING TO THE DEGREES OF BACHELOR OF ARTS AND BACHELOR OF ARCHITECTURE*

During the first four years of this course the student is registered in the College of Science, Literature, and the Arts and follows the plan of study prescribed for a bachelor of arts degree with a major in architecture. The requirements for that degree are given on pages 20-25.

Of the courses listed below, Civil Engineering 38-39-41 (9 credits) is not a part of the work required (normally 180 credits) for the bachelor of arts degree. It is an extra requirement which must be taken as a prerequisite for the work of the last two years of this six-year course in Arts and Architecture.

The work of the four years should include the following courses:

Required for the Major Sequence

COURSE No.	TITLE	CREDITS
Arch. 4-5-6	Graphic Representation	6
Arch. DP-I	Drawing and Painting, Grade I.....	6
Arch. DP-II	Drawing and Painting, Grade II.....	6
Arch. 51-52-53	History of Architecture.....	9
Arch. 57-58-59	Building Materials and Methods.....	6
Arch. AD-I	Architectural Design, Grade I.....	15
Arch. AD-II	Architectural Design, Grade II.....	18

Additional Special Requirements

Mathematics 6, 7, 30	Trigonometry, College Algebra, Analytic Geometry.....	15
Mathematics and Mechanics 91, 92, 93	Calculus, Mechanics for Architects, Strength of Materials.....	12
Civil Engineering 38-39-41	Structural Analysis and Design.....	9

During the last two years of the course, or upon completion of the requirements for the bachelor of arts degree, the student is registered in the School of Architecture of the Institute of Technology to complete the requirements for a bachelor of architecture degree as prescribed in the Bulletin of the Institute of Technology for the five-year course in architecture.

* For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule* and the Bulletin of the Institute of Technology.

† The Senior College courses in mathematics must be in addition to Math. 50-51 (Differential and Integral Calculus).

§ This required total may include "quality credits." See paragraphs 30, 31, 32 on page 5.

COMBINED COURSES IN ARTS, BUSINESS ADMINISTRATION, AND LAW

There are three of these combined courses, two in Arts and Law (VIII-IX) and one in Business Administration and Law (X).

With respect to the degrees mentioned in the two combined courses in Arts and Law, the bachelor of arts degree is conferred on recommendation of the College of Science, Literature, and the Arts. Two degrees are conferred on recommendation of the Law School, namely a nonprofessional degree of bachelor of science in law, and the professional degree, bachelor of laws. The normal courses for these degrees are as follows: Students who have a B.A. or equivalent degree when they enter the Law School may qualify for the professional degree, bachelor of laws, in three years. Students who do not have a degree when they enter the Law School first register for the degree of bachelor of science in law for which the course is two years. Students who have obtained the degree of bachelor of science in law with an average grade of 73, and have the required subjects listed in the prelaw course, may qualify for the professional degree, bachelor of laws, in two years.

VIII. SIX-YEAR COMBINED COURSE IN ARTS AND LAW
LEADING TO THE DEGREES OF BACHELOR OF
SCIENCE IN LAW AND BACHELOR OF LAWS*

This course requires two years of college work and four years in the Law School. Students who complete the two years of college work required for admission to the Law School, stated on page 41, in the College of Science, Literature, and the Arts of this University, or in some other accredited college, and have 90 credits, exclusive of quality credits, with an average of one honor point per credit for all credits earned, become eligible for the degree of bachelor of science in law on completion of two years in the Law School. Law work may be selected to suit the needs of the student, and may be restricted to commercial law for students desiring a preparation for business. Students completing this course may register for the degree of bachelor of laws under the conditions above stated, and may thus secure the two degrees in six years.

IX. SEVEN-YEAR COMBINED COURSE IN ARTS AND LAW
LEADING TO THE DEGREES OF BACHELOR OF
ARTS AND BACHELOR OF LAWS*

This course requires three years of college work and four years in the Law School. The first two years of the college work may be taken in any accredited college, but the third year must be taken in the College of Science, Literature, and the Arts of this University. All three years of college work may be taken before entering the Law School, or two years before entering the Law School, and the third year after the completion of one year or more of law work. The latter plan enables the student to select college work in which he may have become interested during his law course.

Students in this combined course must, before transferring to the Law School, complete the requirements for admission to the Senior College of the College of Science, Literature, and the Arts, stated on pages 21-23. These requirements include foreign language and natural science. (See paragraphs 1B, 1D on page 22.) The student must

* There are two combined courses in Arts and Law. Students interested in either one should read (1) the requirements for both, (2) the preliminary paragraph entitled "Combined Courses in Arts, Business Administration, and Law," above, and (3) the paragraph entitled "Course Preliminary to the Law School" (page 41).

secure at least 90 credits with an average of at least one honor point per credit for all credits earned. He must also secure, either before entering the Law School or after completing one year or more of the law course, 45 additional college credits, of which at least 30† must be of Senior College grade, with an average of at least one honor point per credit. This number of credits required may be reduced by application of the "quality credit" rules given in paragraphs 30, 31, 32 on page 5. This third year of work must be approved by the assistant dean for the Senior College of the College of Science, Literature, and the Arts. In order to satisfy the requirements for the degree of bachelor of laws, the three years of college work must also include the subjects specified on page 41 for the prelaw course (or substitutes approved by the dean of the Law School).

The degree of bachelor of arts is conferred when the 135 credits of college work specified above and at least the first year of the course in the Law School, with the standing required by that school for graduation, are completed. The degree of bachelor of laws is conferred when the work of all seven years is completed.

X. SEVEN-YEAR COMBINED COURSE IN BUSINESS ADMINISTRATION AND LAW LEADING TO THE DEGREES OF BACHELOR OF BUSINESS ADMINISTRATION AND BACHELOR OF LAWS

This program consists of two years of prelaw and prebusiness work as specified below, approximately one and one-half years in the School of Business Administration instead of the full two-year program, and three and one-half years in the Law School instead of the full four-year program, thus qualifying for both the bachelor of business administration and the bachelor of laws degrees in seven years.

The prelaw and prebusiness work must amount to 90 credits, exclusive of quality credits, and shall include the regular prelaw course* except Economics 27 and in addition Economics 5 (Elements of Statistics) and Economics 20, 25-26 (Elements of Accounting and Principles of Accounting).

There are two options for the remaining five years:

- A. The third year exclusively in the Law School and the fourth year exclusively in the School of Business Administration, or vice versa. The fifth and sixth years exclusively in the Law School and the seventh year to be divided between the two schools, approximately half of the program being in each school.
- B. The distribution of both the business administration and the law course throughout the five-year program.

The course requirements in Business Administration include the general core group courses exclusive of Business Law (B.A. 51-52-53). This amounts to a total of 36 credits. Substitutes, such as Economics 185 for B.A. 77, B.A. 184 for B.A. 89, Economics 172 for B.A. 71, may be made with the approval of an adviser. The remaining courses—approximately 32 credits—may be elected from the Senior College courses in economics and business administration with the approval of an adviser.

The course requirements in the Law School include all the courses of the first and second years, the required courses of the third and fourth years, and electives sufficient with the required courses to make a total of approximately 68 credits in those years.

* See page 41 of this bulletin.

† Thirty is the number usually required. For some students it may be reduced by special permission of the assistant dean for the Senior College.

Students will be registered for the joint program in the Law School and the School of Business Administration throughout the five-year period. Their programs will be subject to approval of an adviser from the Law School and an adviser from the School of Business Administration.

XI. SEVEN-YEAR COURSE IN ARTS AND DENTISTRY LEADING TO THE DEGREES OF BACHELOR OF ARTS AND DOCTOR OF DENTAL SURGERY†

During the first three years of this course, the student does his work in the College of Science, Literature, and the Arts, subject to the regulations of the college, and must secure at least 135 credits, with an average of one honor point per credit for all credits earned. (This number of credits required may be reduced by application of the "quality credit" rules given in paragraphs 30, 31, 32, on page 5.) At least 30 credits§ must be in Senior College courses. He must complete the requirements for admission to the Senior College, which are given on pages 21-23, and also the work in chemistry, physics, and zoology prescribed for admission to the School of Dentistry (see page 36).

During his third year, the student elects work in this college subject to the approval of the assistant dean for the Senior College. The work of the freshman and sophomore years in the School of Dentistry, exclusive of technical and practical work, when completed according to the standards required by that school, counts as the equivalent of the fourth year (45 credits) of the Arts course.

COURSES LEADING TO THE DEGREE OF DOCTOR OF MEDICINE*

There are two eight-year courses of study which lead to the degree of doctor of medicine. (See XII, XIII, below.) Each of them requires three full years of college work (135 credits exclusive of quality credits) which must include the courses prescribed for admission to the Medical School. In the first one (XII, below), the student may freely choose the elective courses to make up the total of 135 credits. He will receive the degree of bachelor of science after he completes two years of work in the Medical School. In the second of the two courses (XIII, below), the student must meet the requirements for admission to the Senior College of Science, Literature, and the Arts which he should enter, normally, after two years of residence in the Junior College. His program for the third year must be submitted for approval to the assistant dean for the Senior College. He will receive the degree of bachelor of arts after he completes satisfactorily one year of work in the Medical School.

* Students who want a college degree before entering the Medical School may include all of the required premedical subjects in the "Course Leading to the Degree of Bachelor of Arts" for which the requirements are stated on pages 20-25. They may find it to their advantage to take the course with a liberal arts major rather than a major in one department. The difference is explained in paragraphs under the headings "Requirements in the Curriculum in Liberal Arts" (page 24) and "Requirements in the Curriculum for Concentration" (page 24).

† Only students who have completed the required work in the College of Science, Literature, and the Arts before entering the professional school will be permitted to avail themselves of the privilege of securing the B.A. degree in this combined course.

§ Thirty is the number usually required. For some students it may be reduced by special permission of the assistant dean for the Senior College.

XII. EIGHT-YEAR COURSE IN SCIENCE AND MEDICINE LEADING TO THE DEGREES OF BACHELOR OF SCIENCE, BACHELOR OF MEDICINE, AND DOCTOR OF MEDICINE§¶

The minimum requirements for admission to the Medical School are three full years of college work, amounting to 135 credits,† with an average of at least one honor point per credit.

The premedical work, for which the student is registered in the College of Science, Literature, and the Arts, must include the required courses listed below or their equivalent as approved by the Students' Work Committee of the Medical School.

RESIDENCE

First choice is given to native residents of Minnesota; second choice is given to residents of adjoining states which do not have medical schools; residents of states other than these will be admitted to the Medical School only under exceptional circumstances. Applicants who become residents of the state after graduating from high school will be considered with this group.

Required Courses

English A-B-C (Freshman English, 15 credits) or English 4-5-6 (Freshman Composition, 9 credits) or exemption from the requirement. (See page 9.)

Zoology 1-2-3 (General Zoology, 10 credits) and Zoology 83 (Introduction to Genetics and Eugenics, 3 credits).

Chemistry—Inorganic Chemistry 1-2-11 or 4-5-11 or equivalent (General Inorganic Chemistry and Qualitative Chemical Analysis, 12 credits); Analytical Chemistry 7 (Quantitative Analysis, 4 credits); Organic Chemistry 1-2 (Elementary Organic Chemistry, 8 credits); and Physical Chemistry 107-108 (Elementary Physical Chemistry, 8 credits).

Mathematics—as a prerequisite for physics: Course 1 (Higher Algebra, 5 credits) unless the student has had high school higher algebra; Course 15-16 (Elementary Mathematical Analysis, 10 credits) or equivalent.

Physics 4-5-6 (General Physics, 15 credits).

German sufficient to secure a reading knowledge. Students may meet this requirement by passing German 30-31-32 or 33-34 (Medical German), or by taking a special examination after completing two years of college German. This examination is conducted by the German Department.

Psychology 1-2 (General Psychology, 6 credits).

These required courses cannot be distributed in a three-year program which will be the same for all students. Below are two arrangements with some suggested variations. Students can work out other variations for themselves. Many will find it to their advantage to take one or more required courses in the summer.

1. For students who begin the required German in college:

First year.—Chemistry 1f-2w-11s or 4f-5w-11s (12 credits); German 1f-2w-3s (15 credits); Mathematics 1f-15w-16s or 15f-16w (15 or 10 credits); Zoology 1f-2w-3s (10 credits); an elective subject in the spring for those who take Mathematics 15f-16w.

† The following quotation from the bulletin of the Medical School applies to students who do their premedical work here. "The total number of credits for admission to the Medical School required of students who do their premedical work at Minnesota may, at the discretion of the Admissions Committee, be diminished in the case of superior students, under the quality credit rule of the College of Science, Literature, and the Arts. Required courses may not be omitted unless special permission is obtained from the Admissions Committee of the Medical School."

§ There are two eight-year courses leading to the degree of doctor of medicine. Students interested in either one should read (1) the requirements for both, and (2) the paragraph entitled "Courses Leading to the Degree of Doctor of Medicine" on page 50.

¶ For detailed information about the individual subjects of study in this curriculum (course numbers and titles, credits, prerequisites, schedule of hours and days, etc.), see the University's *Combined Class Schedule*.

Second year.—Analytical Chemistry 7f and Organic Chemistry 1w-2s (12 credits); English 4f-5w-6s (9 credits) or English Af-Bw-Cs (15 credits); German 30f-31w-32s (9 credits); Physics 4f-5w-6s (15 credits).

Third year.—Physical Chemistry 107f-108w (8 credits); Psychology 1f-2w (6 credits); Zoology 83s (3 credits); elective courses to make a total of 135 credits for the three years' work.

In this program, the work of the first year is heavy, that of the second year is normal, and the third year's work is light. A student can get a more even distribution of the required courses by taking English 4f-5w-6s in the freshman year instead of German and by taking German 1f-2w-3s in the sophomore and 30f-31w-32s in the junior year.

2. For students who have had two years of high school German.

First year.—Chemistry 1f-2w-11s or 4f-5w-11s (12 credits); German 3f-33w-34s (15 credits); Mathematics 1f-15w-16s or 15f-16w (15 or 10 credits); Zoology 1f-2w-3s (10 credits); an elective subject in the spring for those who take Mathematics 15f-16w.

Second year.—Analytical Chemistry 7f and Organic Chemistry 1w-2s (12 credits); English 4f-5w-6s (9 credits) or English Af-Bw-Cs (15 credits); Physics 4f-5w-6s (15 credits); Psychology 1f-2w (6 credits); an elective subject in the spring.

Third year.—Physical Chemistry 107f-108w (8 credits); Zoology 83s (3 credits); elective subjects to make a total of 135 credits for the three years' work.

In this program, the work of the first year is heavy, that of the second year is normal, and the third year's work is light. A student can get a more even distribution of the required courses by postponing Zoology until the sophomore year and Psychology until the junior year.

The following subjects are recommended as electives: English composition and literature, speech, advanced zoology (such as Introductory Animal Parasitology), freehand drawing, history, French, higher mathematics, biostatistics or statistics, advanced psychology, sociology (especially social pathology), philosophy, political science, and cultural subjects generally. General Bacteriology, a Medical School subject, may not be presented for admission to the Medical School.

For admission to the Medical School, a candidate's record must show a number of honor points at least equal to the total number of credits in the group of required subjects; also a number of honor points at least equal to the total number of credits in all subjects. (A higher average is exacted of nonresident applicants.) He must take a medical student's aptitude test and a battery of tests for premedical students given by the University Testing Bureau. The scores of these tests are considered by the Students' Work Committee in advising students and determining admission. A student applying for admission for the fall quarter must do so before December 1 of the preceding year. All admissions are subject to the limited registration regulations of the Medical School.¶

The work during the fourth year is taken in the Medical School and is credited toward the degree of bachelor of science. To secure this degree, a student, in addition to the requirements for admission, must have completed the first two years of the medical course and have passed, with a "C" average, the comprehensive examination in these years.

Students who have completed elsewhere three or more years of collegiate or university work which includes the required subjects specified above and which is in other respects the full equivalent of the three years of academic work required in this eight-year course, will be awarded the degree of bachelor of science on recommendation of the faculty of the Medical School, provided they meet the scholarship requirements stated above.

The foregoing regulations governing the quality and amount of premedical training required for admission to the Medical School will be enforced for those who present the minimum amount of work. In cases of mature and superior students, especially such

¶ During the war, a new class will be admitted each 9 months, beginning in March, 1943. These students will normally graduate three calendar years after admission. Another year must be devoted to an internship.

as have taken degrees and have made special progress along some line (even tho it may not have been closely related to medicine), concessions may be made. Such cases will be considered individually upon petition to the dean of the Medical School.

A broad general education is considered fundamental to medical study, but it should be borne in mind that no student can pursue the medical course to advantage without knowledge of biology, chemistry, and physics.

XIII. EIGHT-YEAR COURSE IN ARTS AND MEDICINE, LEADING TO THE DEGREES OF BACHELOR OF ARTS, BACHELOR OF MEDICINE, AND DOCTOR OF MEDICINE*§

During the first three years of this course, the student is registered in the College of Science, Literature, and the Arts, subject to the regulations of the college, and must secure at least 135 credits, with an average of one honor point per credit for all credits earned. At least 30 credits** must be in Senior College courses. He must complete the requirements for admission to the Senior College, given on pages 21-23, and also the work in chemistry, mathematics, physics, psychology, zoology, and foreign language prescribed for the eight-year course in Science and Medicine (page 51).†

During his third year, the student elects work in this college subject to the approval of the assistant dean for the Senior College. The first year of the course in the Medical School, when completed with the standards required by that school, counts as the equivalent of the fourth year (45 credits) of the Arts course.

For admission to the Medical School, a student's record must show a number of honor points at least equal to the number of credits in the group of required subjects; and also a number of honor points at least equal to the total number of credits. A higher standard is exacted of nonresident applicants. The student must have a reading knowledge of German and must be accepted by the Medical School under the limited registration regulations of that school. Exceptions to these requirements may be granted to superior students on petition to the Students' Work Committee of the Medical School.

* Only students who have completed the required work in the College of Science, Literature, and the Arts before entering the professional school will be permitted to avail themselves of the privilege of securing the B.A. degree in this combined course.

† For recommended electives and the restrictions governing them, see page 52.

§ There are two eight-year courses leading to the degree of doctor of medicine. Students interested in either one should read (1) the requirements for both, and (2) the paragraph entitled "Courses Leading to the Degree of Doctor of Medicine" on page 50.

** Thirty is the number usually required. For some students it may be reduced by special permission of the assistant dean for the Senior College.

INDEX

	Page		Page
Administrative officers	2	Junior College	2, 21
Admission	2	Junior College courses	4
Adult special students	2	Juniors	4
Advanced standing	3	Latin-American studies	27
Advisers for students	19	Law	
Amount of work	6	course in Business Administration	
Architecture	47	and	49
Associate in liberal arts, course leading to	20	course in Arts and	48
Auditors	6	prelaw course	41
Bachelor of arts, course leading to	20	Liberal Arts curriculum	21, 24
Business Administration	34	Library Training	31
Business Administration and Law	49	Medical Technology	42
Changes in registration	6	Medicine	
Combined arts and professional courses	9, 47 ff	Arts and	53
Conditions, removal of	4	Science and	51
Correspondence study and Extension courses	30	Military Science and Tactics	43-47
Courses of study	8, 9	Music	28
Credits	3	Naval Science and Tactics	43-47
Curricula	8, 9	Nursing Education	40
Dentistry	36, 50	Petitions	6
Education, College of, preliminary courses	36	Prebusiness course	34
Eighteen credits, registration for	6	Predental course	36
English		Prelaw course	41
exemption from requirement	9	Premedical course	50
habitual bad English	9	Privilege fees	7
placement tests in	9	Program. <i>See Combined Class Schedule</i>	
Examinations		Public Health Nursing	40
English	9	Quality credits	5
for advanced standing	3	Registration	6
for credit	3	changes in	6
for removal of conditions	4	late, fee for	7
to demonstrate proficiency	3	Regulations applying to Freshman	
Extension courses	30	English	9
Faculty advisers for students	19	Residence requirement	5, 20, 24, 30
Failures, rules governing	4	Senior College	2, 23
Fees	6, 7	requirements for admission to	21-23
Freshmen	4	Senior College courses	4
studies for	10	election by Junior College students	5
General Extension, courses in	30	Seniors	4
General information	2	Social Work	32
Grades	3	Sophomores	4
Graduate School, credit in	31	Special fees	7
Graduation honors	29	Special students	2
Honor points	3	Students' Work Committee	2
Honors course plan	29	Subjects in other colleges, election of	5
Honors, graduation	29	Theological Training	
Humanities, course in	25	preparation for	25
Incompletes	4	Tuition	6
Journalism	26	University College	9
Junior and Senior colleges	2, 4		

The Bulletin of the
UNIVERSITY of MINNESOTA

West Central School and Station
Morris, Minnesota
Announcement for the Years 1942-1944



Volume XLV, Number 43

July 2, 1942

*Entered at the post office in Minneapolis as second-class matter, Minneapolis, Minnesota.
Accepted for mailing at special rate of postage provided for in Section 1103, Act of
October 3, 1917, authorized July 12, 1918*

SCHOOL CALENDAR

1942-43

1942

October	5	Monday	First term opens—Registration
October	6	Tuesday	Organization of classes
November	11	Wednesday	Armistice Day; a holiday
November	26	Thursday	Thanksgiving Day; a holiday
December	23	Wednesday	First term closes

1943

January	4	Monday	Second term opens—Registration
January	5	Tuesday	Organization of classes
February	12	Friday	Lincoln's Birthday; a holiday
February	22	Monday	Washington's Birthday; a holiday
March	21	Sunday	Baccalaureate Services
March	26	Friday	Commencement Exercises Second term closes

1943-44 Calendar—To be announced

FACULTY

Walter C. Coffey, M.S., LL.D., President of the University

Clyde H. Bailey, Ph.D., Dean and Director of the Department of Agriculture

AT MORRIS

ADMINISTRATION

Theodore H. Fenske, M.S., Superintendent

Edwin J. Volden, Registrar

Hazel Winter, Secretary and Assistant Registrar

Arlette M. Soderberg, B.A., Librarian

Dorothy Zellers, B.S., Director of Home Economics

Nanna Jelstrup, B.A., Dean of Women

Astrid Holmes, R.N., School Nurse

Bernice Johnson, Accountant

Henrietta Novy, Secretary

AGRICULTURAL ENGINEERING

Julius Felt, Carpentry, Farm Structures

Albert C. Heine, Physics, Farm Mechanics, and Electricity

Alex B. Rolfe, Forge, Welding, and Automotive Engineering

Albert Anderson, Forge

AGRONOMY AND HORTICULTURE

John A. Anderson, B.S.A., Botany and Horticulture

Roy O. Bridgford, M.S., Farm Crops and Soils

ANIMAL HUSBANDRY

Allen W. Edson, B.S., Poultry

Philip S. Jordan, B.S. in Agr., Animal and Dairy Husbandry

AGRICULTURAL ECONOMICS

Allen W. Edson, B.S., Farm Management and Marketing

Glenn I. Prickett, B.A., Rural Sociology and Economics

Clarence J. Hemming, M.S., Farm Accounts, Agriculture

HOME ECONOMICS

Eva Paulson, M.S., Applied Arts and Foods

Ethel Gustafson, B.S., Clothing

Fern B. Johnson, B.S., Home Management and Child Training

Dorothy Zellers, B.S., Foods and Home Furnishing

Astrid Holmes, R.N., Nursing

ASSOCIATED SUBJECTS

Berenice E. Anderson, B.S., Typewriting and English

Clarice Wollan, B.A., Business Training

Nanna Jelstrup, B.A., English and Mathematics

Theodore S. Long, M.A., English and Public Speaking

Margaret O'Connor, M.A., Music

Alice Bayer, B.A., Music

Arlette M. Soderberg, B.A., English and Physical Training

Glenn I. Prickett, B.A., History, Home Project Supervisor

Helen Swan, Piano

Edwin J. Volden, Accounting

GENERAL INFORMATION

PURPOSE

The West Central School of Agriculture was organized in 1910 as a division of the Department of Agriculture of the University of Minnesota. It was established primarily for the training of young men and young women for the vocations of farming and home-making. It is a secondary school accepting students directly from the eighth grade, and offers extensive opportunities to that large group of young people who desire intensive vocational training and who are limited as to the time they can give to the completion of their education. The work is planned and the subjects are taught with the purpose of making the students efficient in their chosen vocations. The courses are sufficiently extended to give a fairly complete technical knowledge of the vocations of farming and homemaking, and a working basis for the economic and sociological aspects of farm life. The technical courses are amply supplemented by cultural subjects designed to give the students a broad and liberal outlook and the necessary preparation for useful citizenship.



View of the Campus from the Air

LOCATION

The school is admirably situated to serve that large section of the state in which it is located. A network of improved state highways connects the city of Morris with all parts of the district. The school itself adjoins the city of Morris and is situated on a natural rise of ground overlooking the Pomme de Terre Valley. The campus, with its thirty-one buildings, attractive lawns, and pleasant drives, is one of the beauty spots in this section.

ADMISSION

The school will admit any young man or young woman of good moral character, who has completed the eighth grade, and who desires technical training in agriculture and home economics. In special cases those who have not completed eighth grade work

will be admitted. Mature young men and women who have been out of school for two or more years and desire special training in agriculture and home economics will be admitted. High school courses equivalent to courses offered in the School of Agriculture will receive the same credit as those offered in the school. High school graduates may register for any of the courses offered, and by properly planning their program, may become graduates of the School of Agriculture in much less time than the three years required for the regular student. Many high school graduates come for one year of specialized vocational training. Students should correspond with the registrar, before coming to the school, and make the necessary preliminary arrangements for registration.

TIME OF OPENING

The fall term of the West Central School of Agriculture will open the first Monday in October and close the Wednesday before Christmas. The winter term will open the first Monday in January and close the last Friday in March. The school work covers a period of six months, at a time when the student can best be spared from home.

THREE-YEAR COURSE

The regular courses cover a period of three sessions of six months each, from October through March. The course for young men is so arranged as to make it possible for the student to select a portion of the work in any of the following groups: agronomy, horticulture, animal husbandry, farm management, economics, or agricultural engineering. The course for young women provides special training in home management, clothing construction, foods, music, home nursing, public speaking, and business training. Both young men and young women may elect courses and receive credit in music in connection with any of the regular courses. They may also, in the third and fourth years, elect academic subjects, preparatory to college entrance. The main emphasis of the institution is given to the regular courses and all students are urged to complete the three-year course.

ADVANCED COURSES

It has been found that many students desire an advanced year after completing the regular three-year course. To meet this demand a fourth session of six months of work is offered. During this advanced year, graduates of the three-year course may elect to specialize in one of the lines of work listed below. They may at the same time choose from the elective lists subjects that they could not obtain during their first three sessions. The major lines of work suggested for boys are dairying, livestock production, farm engineering, economics, and academic subjects. The major lines for girls are home training, nursing, music, business training, and academic subjects.

COLLEGE PREPARATORY

Graduates of the three-year course at the West Central School of Agriculture who have completed two summers of supervised work on their home farms, one additional school year of six months, and one additional summer's work or the equivalent thereof, will be admitted to the University of Minnesota, and to the state teachers colleges.

COURSES FOR HIGH SCHOOL GRADUATES

High school graduates who are interested in securing further training on a non-college vocational basis are at liberty to select from any of the many courses offered. Students may specialize in agriculture, mechanical training, business training, or home economics. For a list of courses especially suited to high school graduates see pages 20 and 21. Some students may desire to earn a School of Agriculture diploma. This can

be done in two years of six months each. Such students must complete certain required work listed on pages 17 through 20. Those not interested in a diploma may attend for one or more years and choose courses which fit their needs.

DEPARTMENT OF MUSIC

For students desiring special courses in music, credit courses in both vocal and instrumental music are offered. Prospective students should refer to the description of the music courses on page 29.

HOME PROJECT WORK

The purpose of this work is to promote and extend the technical work given in the classrooms and laboratories during the regular school sessions. The approved methods of home economics and agricultural practice are applied to some branch of the home or farm enterprise which the project is intended to cover. Reports are required throughout the season and the work is, at all times, in charge of supervisors who make the necessary visits to each student.

A description of all projects is given on pages 31-34.

ROOMS IN DORMITORIES

Old or new students planning to attend the West Central School of Agriculture should write early to the registrar, asking him to reserve a room in one of the dormitories. Students should reserve rooms in advance. Each dormitory room is furnished with two single beds, mattresses and pillows, a dresser, table, and chairs. Preference as to roommates should be stated early, and will be considered as far as possible.



Home Economics Building, Girls' Dormitory, and Agricultural Hall

WHAT TO BRING

Each student should bring with him one comforter and two blankets, towels, comb, brushes, one tumbler, one teaspoon, bedroom slippers, and at least two nightgowns or pajama suits. Students will also bring four single-bed-size sheets, two pillow cases, and a bedspread for a single bed. Sheets and pillow cases should be plainly marked with student's name, marking to be done with nonwashable ink, or by embroidering the name.

Each girl should bring with her, in addition to the items mentioned above, a bathrobe or housecoat, an apron, and a laundry bag. The bathrobe or housecoat may be of any style and material, the laundry bag should be of washable material large enough to hold the soiled clothes of one person. The bedroom slippers should have soft soles. All students will need tennis or gymnasium shoes and gymnasium suits, but it is recommended that students acquire these after entering school.

TUITION FEES

The Minnesota legislature during the 1935 session amended the State School Aid Law, making it possible for eligible students to attend the schools of agriculture without the payment of tuition fees. The fees of such students are paid from State School Aid funds. These students will be required to pay only board and room.

All residents of Minnesota are eligible for tuition exemption who are eighth grade graduates and have not graduated from high school; who are under 21 years of age; and who do not reside in accredited high school districts.

A student who is eligible for tuition exemption must secure a tuition certificate from the county superintendent of the county in which the student graduated from the eighth grade. This certificate must be presented at the time of registration.

Students who do not qualify for tuition exemption are those who have not completed the eighth grade or who are high school graduates; who are 21 years of age or older; who reside in accredited high school districts; or who reside outside of the state of Minnesota.

Students not eligible for fee exemption will pay the following fixed fees as well as fees charged for various courses where laboratory material is used. The amount of these fees will be found in the description of the courses, pages 22-31.

Fees and first month's board and room are payable at the time of registration.

	Per term (3 months)
Registration	\$3.00
Gymnasium	1.00
Health Service	3.00
Book rent	1.50
Post office .....	.20
Privilege	2.50

Students who are not eligible for fee exemption may elect to pay \$21 per term to cover all the tuition, laboratory, and equipment fees (except deposit) rather than pay the individual fees listed above and the special fees charged for various courses.

BOARD AND ROOM

The cost of board will be \$15 per school month and for room \$5 per school month. No increases will be made unless living costs make the same necessary.

Chapter 523 of the 1941 Session Laws of the State of Minnesota provides funds to reimburse school districts for the transportation or board of nonresident high school pupils and students attending the state schools of agriculture, such transportation or board to be at rates, and under rules and regulations to be determined by the State Board of

Education. See your county superintendent or local school board for further information about this.

Board and room are payable the first of each month in advance. No accounts can be carried. If students are compelled to be absent from school, the following regulations will govern refunds. No refunds are given for week-end absences. Room rent refunds are not made for any period of less than one month. Board refunds are made to the extent of one-half credit for the first two-week period and full credit for any additional time, provided the student notifies the dining hall manager before leaving. All students not residents of Morris are required to live in the dormitories and to board in the school dining hall, unless special arrangements are made with the superintendent. Such arrangements should be made prior to registration for classes.

On entering the school each student should bring sufficient money to pay for one month's board and room and to pay his fees, if required. This will amount to from \$25 to \$46.

BREAKAGE DEPOSIT

All students are required to make a breakage deposit of \$5 at the time of registration. Students who break laboratory equipment or damage school property are charged for necessary repairs or replacement and such charges are deducted from breakage deposits. Miscellaneous damage to dormitories and other school buildings, which cannot be charged to individual students, must be charged collectively to the breakage deposits of all students occupying the building. The unused balance of the breakage deposit is returned to the students about three weeks after the close of the second term. No refunds, either from breakage fees or credit account balances, are made to students who have an unpaid student loan. In such cases balances are credited toward payment of the loan.

HEALTH SERVICE

The health fee is used to maintain the Students' Health Service. A special health service building is maintained and a full-time nurse is engaged during the school year. The health fee also provides for daily calls at the Health Service Building by a doctor at a specified hour, and his services are available to all students at that time. It does not provide for extra nurses or for physicians' calls in case of serious sickness, where such are necessary, nor does it provide for extra costs caused by epidemics. These must be paid for by the student receiving the service. The Health Service is not equipped to take care of serious illness and cannot accept responsibility for such cases.

REGISTRATION

No student will be allowed to register for less than 23 credit hours of work, except by special permission of the chairman of the Scholarship and Standards Committee.

All fees must be paid at the time of registration.

No student will be allowed to register after the second week of the term, except by special permission.

CANCELLATION OF REGISTRATION

Students may cancel out of a course without a penalty of failure during the first six weeks of the term. If a student cancels after the first six weeks and is below grade in a subject at the time of cancellation, his record in that subject will be entered as a failure. Subjects may be added only during the first week of the term.

All changes in registration must be made on the proper form which the student will obtain from the chairman of the Scholarship and Standards Committee or his designated representative. All changes in registration must be approved by the Scholarship and Standards Committee.

Where cancellation of registration is necessary before the close of the term, tuition fees will be refunded as follows :

Period of Attendance	Percentage of Deduction	Percentage of Refund
None	None	100
Two days to one week	10	90
One week to two weeks	20	80
Two weeks to three weeks	30	70
Three weeks to four weeks	40	60
Four weeks to five weeks	50	50
Five weeks to six weeks	60	40

No student who has been in attendance more than one half of the term shall receive any refund of tuition.



Clothing Courses Interest the Girls



Business Machines Course is Offered

ABSENCES

Each student who has been absent from a class shall, upon a lapse of not more than two class periods after an absence, present a pass from his preceptor or preceptress. Students off the campus may secure a pass from the chairman of the Scholarship and Standards Committee. In case of sickness, where students are under the care of the nurse, passes will be obtained through her only. All work lost through absence from class must be made up.

Where no legitimate excuse can be given for a class absence, it shall be deemed an unexcused absence. An unexcused absence will automatically reduce the grade to an E for the month in the class where the absence occurred. Failure to submit a pass from the preceptor within the time limit shall be evidence of failure to receive an excused absence.

Permission to go home, necessitating absences from classes, must be applied for, and approved by the preceptor or preceptress, at least two days in advance of such an-

ticipated absence. Students are expected to present with their application a bona fide letter from the parents stating the reasons or need for such absence. In emergency, permission may be received from the superintendent who shall present the application and letter from the parent to the Scholarship and Standards Committee for approval. Failure to make the necessary arrangements shall be considered as evidence of an unexcused absence.

For the protection of the health of the student body it is necessary to insist that all students who go home or otherwise leave the campus and become ill while away, present to the school nurse immediately upon return a statement from a physician and surgeon giving the nature of the illness and approval of the student's return to school. This statement should be presented at the Health Service before the student enters the dormitory in which he or she resides.

Any student who fails to secure permission to be absent from classes from the preceptor or preceptress before leaving, and who is absent for more than one school day may also be required to present a physician's and surgeon's statement approving the student's return to school.

CLASSIFICATION

In order to be classified as a junior, a student must have not less than 42 credit hours of work.

In order to be classified as a senior, a student must have not less than 94 credit hours of work.

In order to be classified as an advanced student, a student must have not less than 160 credit hours of work.

In order to be classified as a special student, a student must be a high school graduate, or must have completed the advanced course.

SCHOLARSHIP STANDARDS

Marking System

Students are graded on a scale of A, B, C, D, and E. A is a high honor mark and E denotes failure. The mark "incomplete" is reserved for special cases and means that for reasons not within the control of the student, he has failed to meet a specific and important requirement of the course, but has, in other respects, done passing work. The incomplete must be removed the month after it has been received. Extension of time for the removal of incompletes may be granted in special cases. If the deficiency is not made up, the mark of E is automatically substituted for the incomplete. If, on account of poor work, a student drops a subject after the first six weeks of the term, he receives a mark of E in the subject.

Honor Point System

Honor points are determined on the basis of grades. For each hour credit of A quality, students receive 3 honor points; of B quality, 2 honor points; and of C quality, 1 honor point. Work of D quality commands no honor points. When a course in which a student receives a mark of E is repeated, only the second grade is considered in reckoning the honor points.

SCHOLARSHIP REQUIREMENTS

In order to obtain a diploma or certificate from the school, a student must have as many honor points and credit hours as are required for graduation. This means that an average scholarship of C is required.

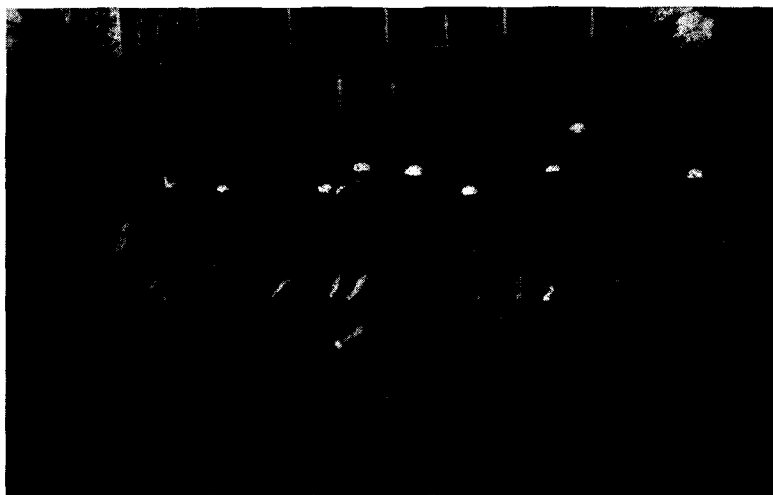
PROBATION AND ELIMINATION

A student who has less honor points than he has credit hours is placed on probation. A student is removed from probation when his total honor points equal his credit hours. A student on probation is subject to dismissal from the school. He may, however, appeal for reinstatement to the Scholarship and Standards Committee.

ELIGIBILITY

The following rules will govern eligibility for all interscholastic contests. The Scholarship and Standards Committee must approve all eligible students.

- A. The student must be enrolled in the school not less than one week before the contest.
- B. He shall be making passing grades in at least four subjects for which he is enrolled. These four subjects must total 20 credit hours.



West Central Football Team in Action

REQUIREMENTS FOR GRADUATION

Completion of the prescribed course of study, including all required work and enough electives to make a total of 160 credit hours.

Attainment of 160 honor points.

All students who expect to graduate from the three-year course are required to complete two summers of home project work. A summer of home project work is defined as completing at least one three-credit project or two two-credit projects. All boys who expect to graduate from the three-year course at the West Central School will be required to complete one crops project and either a livestock or a farm accounts project. Girls who expect to graduate from the three-year course must complete two food projects, two clothing projects, and either a home management or a home furnishing project.

Special cases may arise which make impossible the carrying out of the outlined schedule, in which case the student may, with the approval of the home project supervisor, complete one summer of project work and substitute other projects or equivalent school credits for the project requirements. Such substitution must be petitioned for on

blanks provided by the project supervisor and must be approved by the chairman of the Scholarship and Standards Committee.

Candidates for graduation from the advanced or four-year course must complete the required work of forty-five additional honor points. They must also complete an additional summer of home project work or substitute extra school credits if this is not possible.

Students who expect to qualify for college entrance and are unable to carry the full three summers of project work may complete one summer of project work and ten additional school credits in lieu of each summer of project work missed.

A satisfactory rating in attitude.

Payment of all accounts.

For students transferring from other schools, one full year of residence is required. Under no circumstances will any student be permitted to participate in the graduation exercises who has not completed, in full, all of the requirements for graduation.

HOME LIFE IN THE DORMITORIES

The dormitory life of the students while attending the West Central School of Agriculture is subject to supervision. Everything possible is done to promote a healthful, moral atmosphere.

The preceptors and preceptresses have charge of students in their dormitories, and the regulations enforced are for the good of all.

From 8:00 a.m. to 4:20 p.m. students are busy with their school work. From 4:20 to 6:00 p.m. is a recreation period during which students' time is at their own disposal. During study hours students are expected to be in their rooms and to be quiet so that all may study undisturbed. Students may leave the campus in the evening only upon permission of the preceptors or preceptresses. No firearms of any kind will be permitted in dormitories.

Ample entertainment and recreational facilities are provided at the school, therefore, it is unnecessary for a student to go elsewhere for the same. A student who wishes to attend such functions as public dances is required to secure a letter of approval from his parent or guardian prior to the time of going; such letter to be sent by mail to the preceptor or preceptress of the building in which the student resides. The right to refuse such permission is reserved to the preceptor or preceptress.

The use of tobacco in dormitory rooms is strictly forbidden. Infraction of dormitory rules may be sufficient cause for dismissal from school. Any student found using intoxicating liquor on the school premises will be subject to expulsion from school.

USE OF AUTOMOBILES BY STUDENTS

Experience has shown that ownership or possession of an automobile by a student is usually detrimental to school work. Therefore, a regulation will be placed in force beginning October 5, 1942, prohibiting students from having automobiles in their possession while attending school. There will be a few cases where an automobile is the only means of transportation to and from school, and in such instances an exception will be made, provided the student's parent or guardian makes arrangements with the superintendent prior to the time the student brings the car to school. Such automobiles will be kept in a designated parking lot during the time they are not used, and all keys to the same are to be left with the superintendent. In accepting custody of the automobile the superintendent and the University assume no responsibility for its safekeeping.

DISCIPLINE

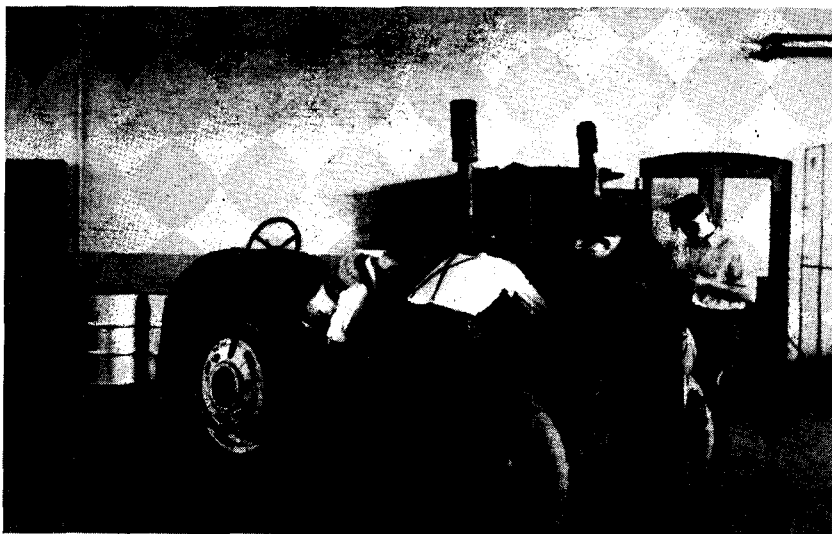
It is the aim of the administration to be firm, reasonable, and sympathetic. A student who becomes antagonistic to the spirit of the school will be dismissed whenever the general welfare requires. The school does not wish to undertake the problem of disciplining students who are not in sympathy with its purposes.

BUILDINGS AND EQUIPMENT

The physical plant now includes thirteen modern brick and stone buildings which compose the educational group, and eighteen frame buildings which make up the farm group. The school group includes two girls' dormitories with facilities for 125 girls; three boys' dormitories with accommodations for 225 boys; Agricultural Hall, with stock judging pavilion, meat cutting, dairy, soils, chemistry, horticulture, botany, and farm crops laboratories, and classrooms for all agricultural and academic work; the Engineering Building with woodshop, forge shop, welding shop, farm mechanics laboratory, drafting room, and three lecture rooms; the Music Hall, with two studios and numerous practice rooms. The Business Training Department is also located in this building and includes typewriting, shorthand, business training, and penmanship rooms. The Dining Hall has two large dining rooms and modern kitchens. The Students' Hospital and Health Service Building is equipped with twenty-seven beds, a dispensary, and the nurses' quarters. The Home Economics Building has two foods laboratories, two sewing laboratories, laundering laboratory, home management room, classrooms, and departmental offices. The Administration Building houses the auditorium, the large library, and the administration, business, and registrar's offices. The Home Management Practice House will accommodate a group of ten people; and the Physical Education Building includes the gymnasium, swimming pool, locker rooms, and team training quarters.

The equipment in all shops and laboratories is ample and sufficient for the most practical and efficient instruction.

The eighteen farm buildings give ample housing facilities for the herds, flocks, and farm equipment which are available for student use.



Repairing the Farm Tractor

ASSEMBLY PERIOD

An assembly period is held three times each week throughout the school year. All students are required to attend these assembly exercises. It is the purpose of the school to secure prominent speakers to address the student body at these morning exercises. The assembly period is also used as a forum for public discussion of the many questions of the day and for announcements of importance to the student body.

RELIGIOUS WELFARE

In maintaining the highest moral and religious atmosphere and in fostering the development of complete Christian manhood and womanhood—physical, intellectual, social, and spiritual—the student body and faculty have developed a close relationship with all of the churches in Morris. Students affiliate with the church of their preference and make it their church home while attending school. In addition to this affiliation, vesper services are held each Sunday on the school campus. These exercises are under the joint direction of the Faculty-Student Religious Welfare Committee. The Young Women's Christian Association is represented on the campus by a strong and active organization.

MUSICAL ORGANIZATIONS

The school musical organizations include a large chorus, a school orchestra, and a band. Students especially interested in music are urged to join one or more of these organizations and receive the training which they afford. The musical clubs appear at various school functions. Public recitals are given at the close of the school year.

THE MOCCASIN

The *Moccasin* is the annual class book published by the senior class of the school. It gives an outline of all school and class activities, is fully illustrated, and contains, in addition to brief articles of student interest, a record of the development and growth of the institution.

WEST CENTRAL SCHOOL NEWS

The *West Central School News* is a quarterly published by the faculty of the school. It serves as a community publication, and is a medium by which former students and alumni are kept in touch with one another and with the school. It is also published to disseminate among its readers useful information and the results of station work.

STUDENT LOAN FUNDS

Students attending the West Central School of Agriculture are afforded the opportunity of participating in the student loan funds available to students who attend the University of Minnesota. This money is loaned to worthy and deserving students at the West Central School in amounts not to exceed \$50 to any one person in one year, at the rate of 5 per cent per annum. Students interested in securing a student loan should correspond with the superintendent of the West Central School of Agriculture.

THE WEST CENTRAL SCHOOL OF AGRICULTURE LOAN FUND

The classes of 1930 and 1931 have left a loan fund of \$450 to be loaned to needy and worthy students. This money is loaned in amounts not to exceed \$50 to any one person in one year at the rate of 5 per cent per annum.

SEVENTH DISTRICT FEDERATION OF WOMEN'S CLUBS LOAN FUND

The Seventh District Federation of Women's Clubs presented the sum of \$1,000 to the West Central School of Agriculture in 1932 to be used as a loan fund to assist needy and worthy students to acquire an education at the West Central School. Students who benefit from this fund must reside in the Seventh District. This fund is loaned in amounts and under conditions that govern other student loan funds.

CALEB DORR CASH SCHOLARSHIPS

By a decision made in April, 1922, by the Board of Regents of the University of Minnesota, a part of the income from a bequest made by the late Caleb Dorr, of Minneapolis, was made available to the schools of agriculture. At the West Central School this fund is awarded to worthy students for excellence in scholarship and for achievement in leadership. The scholarships awarded are used to help defray the students' expenses while they are in school.

INTERSCHOLASTIC ACTIVITIES

Each year the school is represented by teams in debating, declamation, and stock and grain judging, which meet in interscholastic contests with students from similar institutions.

In athletics the school is represented by football, basketball, cross-country, and swimming teams. These teams schedule games with colleges and other agricultural schools.

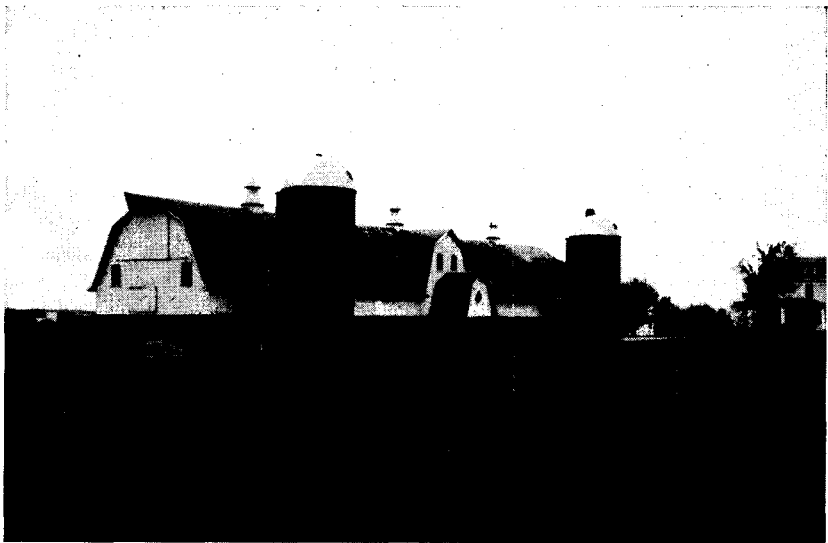
LIBRARY

The library is well equipped to supply the needs of the students. A large number of books have been selected to meet the requirements of the various departments. These, with the government and station reports, are available for use by instructors and students.

The librarian is always ready to give assistance in directing students in the selection of books they may need in the pursuit of their work.

BOYS' AND GIRLS' CLUB WEEK

The annual Boys' and Girls' Club Week is held during June. This is a two-day course open to all boys and girls engaged in 4-H Club work. Boys are given special training in all of the boys' club projects. The girls are given work in home economics with special reference to the club projects. Games, music, and special entertainment will make the entire program of interest to all who attend. A special circular describing this short course is issued.



The Cattle Barn Houses Livestock for Class Work

SHORT COURSE FOR FARM WOMEN

An annual short course for farm women is held during the month of June. The main object of this course is to provide a few days' rest, recreation, and instruction for the women of the farms in west central Minnesota. Talks, classes, and demonstrations along lines of interest to farm women will fill in part of the day. The large dormitory and dining hall will provide ample living accommodations, and part of each day will be given to rest and recreation. A special bulletin describing this course will be issued.

EXPERIMENT STATION

The West Central School and Station is now conducting extensive experiments in crops, soils, horticulture, and animal husbandry. Special reports and bulletins are published from time to time giving the results of experimental work.

SCHOOL FARM

The farm comprises approximately 800 acres and furnishes an extensive laboratory for the work of the school. Information concerning the methods employed on the farm is always available to the students. The classroom work is supplemented with actual practice, either in the field or with laboratory practice using the crops grown on the farm.

STATION FLOCKS AND HERDS

The school now maintains excellent livestock herds and flocks, all of which are used for student work in the Animal Husbandry Department. Purebred Holstein and Shorthorn cattle, Percheron horses, Shropshire sheep, Poland China hogs, and White Leghorn chickens are maintained for station and school purposes. These afford excellent opportunities for students to study intelligently the various courses in animal husbandry.

COURSES OF STUDY

Figures following the names of courses indicate the number of credit hours.

One credit hour is equivalent to one class period per week devoted to recitation or two such periods devoted to laboratory work.

A class period is forty minutes and a laboratory period is eighty-five minutes.

For description of the following courses see pages 22-31.

For description of home project work see pages 31-34.

High school courses equivalent to required courses will be substituted for them in the case of students who transfer from other schools.

COURSES FOR BOYS

In addition to the required courses as outlined below, a boy who wishes to graduate from the three-year course must, during the time he is in school, elect three courses totaling at least 6 credit hours in each of the following: Agronomy and Soils, Animal and Poultry Husbandry, and Agricultural Engineering; and two courses in Agricultural Economics. He may choose these from the elective courses listed. During any one term, at least 23 required and elective credit hours must be carried.

FRESHMAN YEAR

First Term

English I A, 5
 §Farm Arithmetic A, 3
 General Science A, 3
 †Freshman Lectures—no credit
 Physical Education, ½

Second Term

English I B, 5
 §Farm Arithmetic B, 3
 General Science B, 3
 Physical Education, ½

Either Term

§Word Study and Penmanship, 3

Electives

*Carpentry I A, 2
 *Forge I A, 2
 *Farm Mechanics I A, 2
 Management of Laying Flock, 3
 Elementary Beekeeping, 2
 Fruit and Vegetable Crops, 3
 Automotive Engineering A, 3

*Carpentry I B, 2
 *Forge I B, 2
 Farm Mechanics I B, 2
 Incubation and Brooding, 3
 Crops and Soil Management
 Elementary English
 Automotive Engineering B, 3

Either Term

*Grain Crops, 5
 Livestock Production, 5
 Chorus, 1
 Group or Private Music, 1 or 2

* Required as a prerequisite for later courses.

† Not required of transfer students.

§ May be removed as a requirement by special examination.

JUNIOR YEAR

First Term

Second Term

Required

English II A, 5
 Chemistry A, 3
 Physical Education, ½

English II B, 5
 Chemistry B, 3
 Physical Education, ½

Either Term

Farm Accounts, 3

Electives

Grain Judging, 2
 *Physics, 5
 Farm Mechanics II A, 3
 Plant Diseases, 3
 Stock Judging A, 1
 Argumentation, 2
 Pure Seed Production, 2
 Conservation, 2
 Fruit and Vegetable Crops, 3
 *Farm Structures A, 1

Landscape Gardening, 2
 *Feeds and Feeding, 5
 Soils, 4
 Farm Mechanics II B, 3
 *Electricity, 4
 Stock Judging B, 1
 Forage Crops, 2
 Incubation and Brooding, 3
 Public Speaking, 2
 Electric Arc Welding, 2
 Elementary Beekeeping, 2
 Farm Structures B, 1

Either Term

*Gas Welding, 2
 Typewriting, 5
 Group or Private Music, 1 or 2
 Chorus, 1
 Music Appreciation, 2
 Mechanical Drawing, 1

SENIOR YEAR

First Term

Second Term

Required

English III A, 5
 United States History, 5
 Physical Education, ½

English III B, 5
 Government, 5
 Physical Education, ½

Electives

*Farm Management A, 3
 Livestock Management, 3
 Dairy Production, 3
 Pure Seed Production, 2
 *Farm Structures A, 1
 Animal Breeding, 3
 *Bookkeeping A, 5
 *Elementary Algebra A, 5
 Farm Marketing, 2
 Farm Mechanics III, 4
 *Commercial Law A, 5
 Farm Economics, 3
 Mechanical Drawing, 1
 Special Problems in Farm Crops, 2
 Conservation, 2

Farm Management B, 3
 Animal Diseases, 2
 Rural Sociology, 3
 Farm Structures B, 1
 Advanced Electricity, 3
 Bookkeeping B, 5
 Elementary Algebra B, 5
 Farm Finance, 3
 Livestock Problems, 2
 Commercial Law B, 5
 First Aid, 2
 Advanced Poultry Production, 2

Either Term

Meats, 4
 Typewriting, 5
 Shorthand, 5
 Gas Welding, 2
 Electric Arc Welding, 2
 Advanced Stock Judging, 2
 Group or Private Music, 1 or 2
 Chorus, 1
 Music Appreciation, 2

* Required as a prerequisite for later courses.

Two credits shall be allowed for participation in interscholastic debate. Members of interscholastic athletic teams will be excused from gymnasium classes. Not more than five special credits, including credits for debate and music, shall count toward graduation.

COURSES FOR GIRLS

FRESHMAN YEAR

First Term

English I A, 5
General Science A, 3
†Social Training A, 2
Home Accounts I A, 3
§Word Study I A, 2
Physical Education, ½

*Clothing I A, 3
*Foods I A, 3
*Drawing and Design I A, 2
Management of Laying Flock, 3

Second Term

Required

English I B, 5
General Science B, 3
Social Training B, 2
Home Accounts I B, 3
§Word Study I B, 2
Physical Education, ½

Electives

*Clothing I B, 3
*Foods I B, 3
*Drawing and Design I B, 2
Incubation and Brooding, 3
*Landscape Gardening, 2

Either Term

Freshman Vocal Study, 1
Group or Private Music, 1 or 2
Chorus, 1

JUNIOR YEAR

First Term

English II A, 5
Home Furnishing II A, 3
Physical Education, ½

*Foods II A, 3
*Clothing II A, 3
*Crafts A, 2
Wardrobe Planning, 2
*Laundering, 2
*Home Nursing II A, 3
Fruit and Vegetable Crops, 3
Chemistry A, 3

Second Term

Required

English II B, 5
Home Furnishing II B, 3
Physical Education, ½

Electives

*Foods II B, 3
*Clothing II B, 3
*Crafts B, 2
*Home Nursing II B, 3
Incubation and Brooding, 3
Household Equipment II B, 2
*Child Care and Training, 3
Chemistry B, 3

Either Term

Group or Private Music, 1 or 2
Chorus, 1

SENIOR YEAR

First Term

English III A, 5
Home Management A, 3
United States History, 5
Economics of Buying, 3
Clothing III A, 4
Home Nursing III A, 3
Physical Education, ½

Second Term

Required

English III B, 5
Home Management B, 3
Government, 5
Clothing III B, 4
Home Nursing III B, 3
Foods III B, 3
Physical Education, ½

Either Term

Home Management House, 8

* Required as a prerequisite for later courses.

† Not required of transfer students.

§ May be removed as a requirement by special examination.

Electives

First Term	Second Term
*Crafts A, 2	Crafts B, 2
*General History A, 5	General History B, 5
*Elementary Algebra A, 5	Incubation and Brooding, 3
*Bookkeeping A, 5	Elementary Algebra B, 5
*Commercial Law A, 5	Rural Sociology, 3
	Bookkeeping B, 5
	Commercial Law B, 5
Either Term	
Typewriting, 5	
Group or Private Music, 1 or 2	
Chorus, 1	

Through their choice of electives, students may prepare themselves for one of several lines of work. At the time of registration, students will be advised how to select their work so that it will prepare them for the vocation in which they are interested. They may prepare for business positions, for teacher training work, for college entrance, or for nurse's training.

COURSES FOR BOYS AND GIRLS

ADVANCED YEAR AND COLLEGE PREPARATORY COURSES

First Term	<i>Required</i>	Second Term
English IV A, 5	English IV B, 5	
Elementary Algebra A, 5	Elementary Algebra B, 5	
Plane Geometry A, 5	Plane Geometry B, 5	
General History A, 5	General History B, 5	
Botany, 5	†Elementary Chemistry, 5	
Physical Education, ½	Physical Education, ½	

Electives

Any course not previously completed during the regular three-year program or any business training courses. Attainment of 45 honor points and 45 credits required to complete advanced year.

HIGH SCHOOL GRADUATES

Graduates of high schools are at liberty to select from all courses offered. The following list of courses may be used as a guide for making up a program of study.

AGRICULTURE

Fall Term	Winter Term
Farm Economics	Farm Finance
Farm Management A	Farm Management B
Farm Accounts	Soils
Farm Marketing	Advanced Stock Judging
Plant Diseases	Feeds and Feeding
Pure Seed Production	Animal Diseases
Special Problems in Farm Crops	Animal Breeding
Grain Judging	Livestock Problems
Livestock Management	Beekeeping
Dairy Production	Fruits and Vegetables
Management of Laying Flock	Incubation and Brooding
Conservation of Natural Resources	Advanced Poultry Production
Fruits and Vegetable Crops	Landscape Gardening

* Required as a prerequisite for later courses.

† Not required of those who have completed Chemistry A and B.

Electives

BUSINESS TRAINING COURSES

Fall Term	Winter Term
Bookkeeping A	Bookkeeping B
Advanced Bookkeeping A	Advanced Bookkeeping B
Business Spelling and Penmanship A	Business Spelling and Penmanship B
Typewriting A	Typewriting B
Advanced Typewriting A	Advanced Typewriting B
Business English A	Business English B
Shorthand A	Shorthand B
Beginners' Dictation A	Beginners' Dictation B
Dictation A	Dictation B
Secretarial Studies A	Secretarial Studies B
Commercial Law A	Commercial Law B
Business Machines	Business Machines

HOME ECONOMICS

Fall Term	Winter Term
Foods II A	Foods II B
Home Management A	Foods III B
Home Management House	Home Management B
Laundering II A	Home Management House
Economics of Buying III A	Child Care and Training II B
Clothing II A	Household Equipment II B
Clothing III A	Clothing II B
Wardrobe Planning II A	Clothing III B
Home Furnishing II A	Home Furnishing II B
Crafts II A	Home Nursing II B
Home Nursing III A	Home Nursing III B
	Crafts II B

NOTE.—Students should have had some training in home economics in either junior or senior high school; otherwise it will be necessary to start with the beginning courses.

MECHANICAL TRAINING

Fall Term	Winter Term
Farm Structures A	Farm Structures B
Forge I A	Forge I B
Farm Mechanics I A	Farm Mechanics I B
Farm Mechanics II A	Farm Mechanics II B
Farm Mechanics III A	Automotive Engineering B
Automotive Engineering A	Advanced Electricity
Electricity	Arc Welding
Physics	Gas Welding
Arc Welding	
Gas Welding	

DESCRIPTION OF COURSES

AGRICULTURAL ECONOMICS

- Farm Economics. A study of fundamental economic principles including the economic organization for production, demand and supply, price and value, the economics of government, the nature of money and banking, international trade, and other current economic problems. Rec. 3 hrs.; 3 credits.
- Farm Finance. A study of the financial structure of agriculture, rural taxation, the relation of tariffs and the monetary system to the agricultural industry. The Farm Credit Administration is fully covered. Rec. 3 hrs.; 3 credits.
- Farm Accounts. A study of farm accounts. The student keeps a practical set of books on the year's work, from the taking of the inventory to closing the accounts at the end of the year. Rec. 3 hrs.; 3 credits.
- Farm Management A. A study of farm organization as related to types of farming, combinations of enterprises, crop rotation, soil management, field and farmstead arrangement, and the efficient use of labor and equipment. Rec. 3 hrs.; 3 credits.
- Farm Management B. An advanced course in farm organization. Farm budgeting will be given important consideration. Prerequisite: Farm Management A. Rec. 3 hrs.; 3 credits.
- Farm Marketing. A study of the present system of distributing farm products. Special study is made of co-operative laws and co-operative marketing organizations. Rec. 2 hrs.; 2 credits.

AGRICULTURAL ENGINEERING

- Carpentry I A. Carpentry; care, use, and sharpening of tools; laying-off work; making of joints and framing, work designed to be especially helpful in planning, framing, and construction of farm buildings. Lab. 2, 2 hrs.; 2 credits; fee \$1.
- Carpentry I B. Continuation of Carpentry I A, with emphasis placed on completion of some project selected by the student. Prerequisite: Carpentry I A. Lab. 2, 2 hrs.; 2 credits; fee \$1.
- Farm Structures A. Design, location, and erection of farm buildings. A study is made of roofs, pitches, trusses, etc. Exercises in building, framing, window and door frame construction. Part of the time is devoted to mechanical drawing and plan reading. Lab. 1, 2 hrs.; 1 credit.
- Farm Structures B. A continuation of Farm Structures A. The student draws plans and makes up the material list for a farm building. Prerequisite: Farm Structures A. Lab. 1, 2 hrs.; 1 credit.
- Forge I A. Blacksmithing. Forging and welding of mild steel. Specific instruction in making and maintaining reducing fire and in the basic forge operations of drawing, bending, punching, upsetting, and welding. Lab. 4 hrs.; 2 credits; fee \$1.
- Forge I B. Continuation of Forge I A. Lab. 2, 2 hrs.; 2 credits; fee \$1.
- Farm Mechanics I A. A course designed to be of help in repairing general farm machinery and equipment. Work is offered in soldering, rope splicing, knots, belt lacing, use of taps and dies, tool sharpening and adjustment, harness repair work, etc. Lab. 2, 2 hrs.; 2 credits; fee \$1.
- Farm Mechanics I B. A continuation of Farm Mechanics I A. Emphasis is placed on some definite repair project which involves use of shop tools and equipment. Prerequisite: Farm Mechanics I A. Lab. 2, 2 hrs.; 2 credits; fee \$1.

- Farm Mechanics IIA. Use of farm level—simple exercises in "running levels," chaining and measuring land. Exercises in map reading, making of farm plats from measurements taken in the field. Rec. 2 hrs.; lab. 1, 2 hrs.; 3 credits.
- Farm Mechanics II B. A study is made of all types of farm machinery, their adjustment and care. Materials used in the construction of farm machinery are covered. Selection of machinery for the field. Rec. 2 hrs., lab. 1, 2 hrs.; 3 credits.
- Farm Mechanics III A. The first six weeks are given to a study of the uses of concrete about the farm, grading and proportioning of sand and gravel, water cement ratios, mixing and placing of concrete, use of reinforcing in concrete, and the estimating of materials, etc. The last six weeks are devoted to a study of modern lighting, heating, ventilating, plumbing, and sewage disposal systems for the farmstead, their cost of installation, care, and maintenance. Prerequisite: Physics and Electricity I. Rec. 3; lab. 1, 2 hrs.; 4 credits.
- Automotive Engineering I A. A study is made of internal combustion engines. Emphasis is placed on stationary farm engines, tractor, truck, and automobile motors and their accessories. Rec. 2 hrs.; lab. 1-2 hrs.; 3 credits.
- Automotive Engineering I B. Practice is given in the adjustment, operation, and maintenance of all types of automotive equipment as found on the modern farm. Prerequisite: Automotive Engineering I A. Rec. 2 hrs., lab. 1-2 hrs.; 3 credits.
- Electricity. Kinds of electrification, magnetism, electromagnetism, magnetic induction, chemical generators, dynamos, motors, etc. Rural electrification, wiring of farm buildings, maintenance of electrical appliances in the home. Prerequisite: Physics. Rec. 3 hrs.; lab. 1, 2 hrs.; 4 credits.
- Advanced Electricity. A continuation of Electricity. The student is required to make power calculations, in both D.C. and A.C. circuits. Rec. 2 hrs.; lab. 1, 2 hrs.; 3 credits.
- Mechanical Drawing. Principles of drafting, lines, lettering, views of objects, making of working drawings, interpretation of drawings. Lab. 2 hrs.; 1 credit.
- Gas Welding. A careful study is made of the apparatus, of safety measures, of action of the various metals under the torch, and uses of flux. Student begins by running simple beads, gradually working into actual repair projects on welding, brazing, and cutting with the torch. Prerequisites: Forge I A and B. Rec. 1 hr.; lab. 1, 2 hrs.; 2 credits; fee \$3.
- Arc Welding. The course covers practice in making flat, horizontal, vertical up and down and overhead welds with bare and coated electrodes. Practice is given on both D.C. and A.C. welding machines. Prerequisite: Gas Welding. Rec. 1 hr.; lab. 2 hrs.; 2 credits; fee \$6.

AGRONOMY AND SOILS

- Grain Crops. A study of corn and the principal cereal crops with emphasis placed upon the types and varieties most desirable, soil and cultural requirements, seed selection and preparation, cost of production, harvesting, and methods of improvement. Rec. 5 hrs.; 5 credits.
- Grain Judging. Score card practice, commercial grading and judging work, with the object in view of making the student proficient in the selection and growing of pure-bred seed. Prerequisite: Grain Crops. Lab. 2, 2 hrs.; 2 credits.
- Forage Crops. A study of the leguminous crops, clover, alfalfa, etc., pastures and meadows, and the annual forage crops. Cultural requirements of forage crops and their importance to the farm. Lab. 2, 2 hrs.; 2 credits.
- Pure Seed Production. Grow, harvest, clean, test, and secure certification from the Minnesota Crop Improvement Association of any of the recommended varieties of grains or corn. Prerequisite: Grain Crops. Lab. 2, 2 hrs.; 2 credits.

- Plant Diseases. A study of the most important diseases affecting farm crops, with the recommended methods for control. Rec. 3 hrs.; 3 credits.
- Soils. This course is applied to the needs of western Minnesota. Soil formation, soil types, soil physics, soil chemistry, soil tillage, and the use of fertilizers are given attention. Prerequisite: Chemistry A. Rec. 3 hrs.; lab. 1, 2 hrs.; 4 credits.
- Special Problems in Farm Crops. A course for seniors and advanced students. Takes up problems of a practical nature in farm crops and farm management and covers them more fully than do the elementary courses. Prerequisites: Grain Crops and Forage Crops, or their equivalent. Rec. 2 hrs.; 2 credits.
- Crops and Soil Management. A course for special students who intend to spend only three months' time in school. Includes a comprehensive study of the practical phases of corn and grain growing, soil management, and forage crops. Rec. 3 hrs.; 3 credits.

ANIMAL AND DAIRY HUSBANDRY

- Livestock Production. An introduction to the livestock industry. The place of livestock on the farm is discussed, the types and breeds best adapted to the needs of different kinds of farms are studied. Principles of care and management outlined. Practice in selection and judging. Rec. 4 hrs.; lab. 1, 2 hrs.; 5 credits.
- Stock Judging A. Comparative judging of beef cattle, swine, and sheep. Lab. 1, 2 hrs.; 1 credit.
- Stock Judging B. An advanced course in comparative judging of dairy cattle and horses. Lab. 1, 2 hrs.; 1 credit.
- Advanced Stock Judging. Open to those trying out for the interscholastic stock judging team. Lab. arranged; 2 credits.
- Feeds and Feeding. Principles of animal nutrition, composition and nutritive value of feeds, feeding standards, methods of feeding. Prerequisite: Chemistry A. Rec. 5 hrs.; 5 credits.
- Livestock Management. Production of beef cattle, sheep, swine, and horses, both purebred and market stock, including, from a practical standpoint, feeding and management of the herd or flock, selection of breeding stock, and arrangement of buildings and yards. Rec. 3 hrs.; 3 credits.
- Dairy Production. This course is designed to fit the student for the successful management of a dairy herd. The course prepares students for positions as testers in dairy herd improvement associations. Prerequisite: Feeds and Feeding. Rec. 2 hrs.; lab. 1, 2 hrs.; 3 credits.
- Animal Diseases. Cause and prevention of the more common diseases of farm animals, including emergency treatment. Rec. 2 hrs.; 2 credits.
- Animal Breeding. Theory and practice of animal breeding as it affects the economic value of our livestock. Rec. 3 hrs.; 3 credits.
- Meats. Practice in killing, cutting, and curing of meats for home consumption on the farm. Course is limited to seniors, advanced and special students. Lab. 8 hrs.; 4 credits.
- Livestock Problems. A seminar and reading course in which the student selects problems of special interest to him. Open only to seniors and advanced students with at least 10 credit hours in animal husbandry. Rec. 2 hrs.; 2 credits.

BEE CULTURE

- Elementary Beekeeping. Fundamentals of bee behavior throughout the cycle of the year. Fundamentals of beekeeping practice throughout the year. Modern equipment for beekeeping practice. Starting with bees, increase, moving, uniting, feeding. Rec. 2 hrs.; 2 credits.

BUSINESS

- Business Spelling and Penmanship A. An advanced course in spelling and penmanship for students taking the business course. Rec. 3 hrs.; 3 credits.
- Business Spelling and Penmanship B. Continuation of Business Spelling and Penmanship A. Rec. 3 hrs.; 3 credits.
- Typewriting A. Individual instruction in the manipulation of all parts of the machine. The keyboard is learned by the touch method. Practical lessons are used. Drill 5 hrs.; lab. 5 hrs.; 5 credits; fee \$1.50.
- Typewriting B. A continuation of Typewriting A. 2 or 5 credits; fee \$1.50.
- Advanced Typewriting A. For those who have had previous typing experience and can meet the set standards. Accuracy and speed are stressed. 2 or 5 credits; fee \$1.50.
- Advanced Typewriting B. A continuation of Advanced Typewriting A. 2 or 5 credits; fee \$1.50.
- Shorthand A. The Gregg System taught according to the functional method and supplemented with speed studies is used. Rec. 5 hrs.; 5 credits.
- Shorthand B. Continuation of Shorthand A. Rec. 5 hrs.; 5 credits.
- Beginners' Dictation A. Dictation and transcription drill for those students taking Shorthand A. Rec. 5 hrs.; 5 credits.
- Beginners' Dictation B. Continuation of dictation and transcription drill for those students taking Shorthand B. Rec. 5 hrs.; 5 credits.
- Dictation A. For those who have had previous training in shorthand. A continuation of Shorthand A, stressing speed, accuracy, and machine transcription. Rec. 5 hrs.; 5 credits.
- Dictation B. Continuation of Dictation A. 5 hrs.; 5 credits.
- Business English A. A thoro study of grammar and effective English usage in relation to business. Rec. 5 hrs.; 5 credits.
- Business English B. Continuation of Business English A, dealing with the writing of business letters and other forms. Rec. 5 hrs.; 5 credits.
- Secretarial Studies A. Course includes training in office routine, such as filing, indexing, and stenciling. Individual instruction in dictaphone. Rec. 5 hrs.; 5 credits.
- Secretarial Studies B. Continuation of Secretarial Studies A. Rec. 5 hrs.; 5 credits.
- Bookkeeping A. Preparation and interpretation of balance sheets; purpose of accounts and principles of account classification; profit and loss statements. Rec. 5 hrs.; 5 credits.
- Bookkeeping B. Source of ledger entries; cash receipts and disbursements; general journal; purchase and sales records; practice set. Rec. 5 hrs.; 5 credits.
- Advanced Bookkeeping A. Controlling accounts; records of original entry; business practice and procedure; depreciation and bad debts; accruals and deferred items; adjusting and closing entries; partnerships, departmental revenue accounts; practice set. Rec. 5 hrs.; 5 credits.
- Advanced Bookkeeping B. Nature and characteristics of the corporation; proprietorship in the corporation; formation and operation of a corporation; corporation accounts; fixed and intangible assets; manufacturing; analysis of financial statements; use of statistical data in business management; graphical method of presenting accounting facts. Rec. 5 hrs.; 5 credits.
- Commercial Law A. A thoro study is made of contracts, sales, agency, and negotiable instruments. Rec. 5 hrs.; 5 credits.
- Commercial Law B. Continuation of Commercial Law A and further study includes guaranty, bailment, insurance, real property, fixtures, partnerships, corporations, and bankruptcy. Rec. 5 hrs.; 5 credits.

Business Machines. Operation of the more common machines found in offices. Includes practice on adding machines, listing machines, calculators, and duplicating devices. Rec. 1 hr.; lab. 4 hrs.; 3 credits.

ENGLISH AND PUBLIC SPEAKING

English I A. Functional grammar, capitalization, punctuation, word study, and library instruction. Oral composition, discussions, reports, and simple debates. Extensive reading with memory work from various types of literature of representative English and American authors. Rec. 5 hrs.; 5 credits.

English I B. Continuation of English I A. Written composition with special emphasis on letter writing and story telling. Rec. 5 hrs.; 5 credits.

English II A. Review of functional grammar, advanced work based on variety in sentence structure and the paragraph. Extensive reading with memory work from various types of literature of representative English and American authors. Rec. 5 hrs.; 5 credits.

English II B. Continuation of English II A. Library instruction, gathering information, organization, oral reports, and letter writing. Rec. 5 hrs.; 5 credits.

English III A. Remedial work in grammar, punctuation, and the mechanics of English with special emphasis on the clause and phrase for variety and clearness. Understanding of American life and ideals of the past and the present by the study of great American writers and their works. Rec. 5 hrs.; 5 credits.

English III B. Continuation of English III A. Gathering material from books and periodicals, compiling a bibliography, with special emphasis on the logical outline in exposition and argument. Stress on public speaking, and formal and informal debate. Rec. 5 hrs.; 5 credits.

English IV A. Advanced work in grammar, good usage, variety in diction, and punctuation. Creative writing and library research. Extensive reading from English literature to modern times with major emphasis upon the selections themselves and minor attention to historical backgrounds and biography of writers. Rec. 5 hrs.; 5 credits.

English IV B. Continuation of English IV A. Rec. 5 hrs.; 5 credits.

Elementary English. A course for older boys and men who attend school during the winter term. Reading, spelling, and a brief review of the principles of grammar is given. Rec. 3 hrs.; 3 credits.

Argumentation. Principles of debate are studied, gathering of evidence and outlining arguments stressed. Practice in speaking. Rec. 2 hrs.; 2 credits.

Public Speaking. A study of the facts and principles common to all speaking, together with platform projects. Rec. 2 hrs.; 2 credits.

Word Study and Penmanship. Drill in spelling and usage of common words, and penmanship. Rec. 3 hrs.; 3 credits.

Word Study I A (Girls). A study of the spelling, meaning, use, and pronunciation of words designed to increase and improve the student's written and oral work. Rec. 2 hrs.; 2 credits.

Word Study I B. A continuation of Word Study I A. Rec. 2 hrs.; 2 credits.

HOME ECONOMICS

To defray costs of laboratory supplies used in the various courses, a fee of \$2 per term is charged all students registering in home economics courses.

FOODS AND HOME MANAGEMENT

Foods I A. This course is divided into five parts. It gives the basic principles and standards for each of the following: canning, food service, planning and preparation of breakfasts, breads, and salads. Lab. 3, 2 hrs.; 3 credits.

- Foods I B. A continuation of the Foods I A course as applied to luncheons or suppers and dinners. A study of batters, doughs, cakes, cookies, and meats is included here. Lab. 3, 2 hrs.; 3 credits.
- Foods II A. A study of body needs, planning of dietaries, menus, and meals. Prerequisites: Foods I A and B. Lab. 3, 2 hrs.; 3 credits.
- Foods II B. A continuation of Foods II A, the actual serving of meals to small groups, and a detailed study of meats. Lab. 3, 2 hrs.; 3 credits.
- Foods III. This course is planned to help the girls realize the possibility of using their foods training to provide an income and to aid them in planning, preparing, and serving special foods for club meetings, ladies' aids, group suppers, buffet meals, teas, etc. Rec. and lect. 2 hrs.; 2 hrs. lab. as arranged; 3 credits.
- Home Management A. A study of the problems of management in the home including family and community relationships. Prerequisites: Child Care and Training, Foods I and II, Laundering. Rec. 3 hrs.; 3 credits.
- Home Management B. A continuation of Home Management A. Includes a study of possible vocations for the home economics trained girl. Rec. 3 hrs.; 3 credits.
- Home Management House. Senior girls spend eight weeks living in the practice house, where, with the supervision of a resident instructor, they actually manage the home, and care for a child. 8 credits.
- Child Care and Training. This course is designed to give an understanding of the place of the child in the home, through the study of the physical care and mental training of the infant and preschool child. Rec. 3 hrs.; 3 credits.
- Laundering. Includes care of laundry and utensils, study of water, soap, starch, removal of stains, washing of woolen and silk garments, ironing, and the principles of dry cleaning. Rec. 1 hr.; lab. 1, 2 hrs.; 2 credits.
- Social Training I A. The subject matter includes the study of conversation, table etiquette, dress, boy and girl relationships, and social correspondence. Rec. 2 hrs.; 2 credits.
- Social Training I B. Continuation of Social Training I A. Rec. 2 hrs.; 2 credits.
- Economics of Buying A. A general study of buying points for household supplies, such as clothing, equipment, and luxuries. Rec. 3 hrs.; 3 credits.
- Home Accounts A. Simple arithmetic as applied in figuring costs of what we produce and consume. The making of budgets and keeping of accounts as suited to needs. Rec. 3 hrs.; 3 credits.
- Home Accounts B. Continuation of Home Accounts A. Rec. 3 hrs.; 3 credits.
- Household Equipment II B. A study of the basic principles for the selection and use of large and small equipment used in the home. Lab. 2, 2 hrs.; 2 credits.

CLOTHING AND RELATED ART

All materials for clothing courses must be selected in consultation with the instructor. Students are requested not to bring materials from home, unless arrangements have been made with the instructor. Each girl should have a thimble, tape measure, scissors, and needles.

- Clothing I A. Two aprons, a holder, a slip or panties, and Christmas gifts are made. Problems of darning and patching are required. A study of cotton materials is made, including wearing qualities and prices. Simple decorations, trimmings, and the cost of finished garments are discussed. Lab. 3, 2 hrs.; 3 credits.
- Clothing I B. A study of cotton and linen dress fabrics; making pajamas, a simple wash dress, and a better wash dress. Simple problems in decorative needlework; discussion of clothing budget. Demonstration of sewing machine attachments. Lab. 3, 2 hrs.; 3 credits.

- Clothing II A. Includes the study and making of a house dress for wear in foods classes and the Home Management House. A study of wool and making of at least one wool garment. The use of sewing machine attachments is studied and practiced. Prerequisites: Clothing I A and B, or equivalent. Lab. 2, 3 hrs.; 3 credits.
- Clothing II B. A study of silk fabrics, the making of a silk garment. A study of children's clothing and the making of one child's outfit. Lab. 2, 3 hrs.; 3 credits.
- Clothing III A. A course in make-over. Each student in conference with the instructor decides on the problem. A study of millinery is included. Prerequisites: Clothing II A and B, or equivalent. Lect. 1 hr.; lab. 3, 2 hrs. or lab. 4, 2 hrs.; 4 credits.
- Clothing III B. Each girl makes as many complicated garments as time will permit, in order to improve her technique. At least one dress or suit and a complete outfit for graduation are made. Lect. 1 hr.; lab. 3, 2 hrs.; or lab. 4, 2 hrs.; 4 credits.
- Wardrobe Planning II A. This course is so planned that it enables the girl to plan clothes appropriate to various types, figures, and colorings, and which are suitable for long wear. Lect. 2, 1 hr.; 2 credits.
- Drawing and Design I A. Principles of design and color harmony with emphasis upon design as expressed in clothing, house furnishings, and articles in common use. Lab. 2, 2 hrs.; 2 credits.
- Drawing and Design I B. Application of design principles to costume selection and design. Lab. 2, 2 hrs.; 2 credits.
- Home Furnishings II A and B. Courses include the fundamentals of artistic home planning and furnishing. Finishes for walls and floors, as well as selection of rugs or carpets, curtains, and furniture are studied. Work of Old World and modern artists is studied. Renovation of used furniture is discussed and, whenever possible, carried out in the laboratory. Prerequisites: Drawing and Design, Landscape Gardening. Rec. and lect. 3, 2 hrs.; 3 credits each course.
- Crafts A. Application of the principles of design to the making of worth-while decorative household articles and personal belongings. Lab. 2, 2 hrs.; 2 credits.
- Crafts B. Continuation of Crafts A, with more advanced problems. Lab. 2, 2 hrs.; 2 credits.
- Home Nursing II A. Structure and function of the human body and personal hygiene. Rec. 3 hrs.; 3 credits.
- Home Nursing II B. Stresses the principles of first aid. Rec. 3 hrs.; 3 credits.
- Home Nursing III A. Home care of the sick, including prevention and care of communicable diseases. Rec. 3 hrs.; 3 credits.
- Home Nursing III B. Maternal and child hygiene. Rec. 3 hrs.; 3 credits.

HORTICULTURE

- Fruit and Vegetable Crops. Planning, planting, culture, value, and management of the orchard and garden on the general farm. Rec. 3 hrs.; 3 credits.
- Landscape Gardening. A study of trees, shrubs, and flowers adapted to western Minnesota and the proper arrangement of these plants on the farmstead. Rec. 2 hrs.; 2 credits.

MATHEMATICS

- Farm Arithmetic A (Boys). Training in simple mathematical processes, application of principles to problems requiring measurements of material, extension, capacity, with practical applications to farm work. Helpful in the mathematics of the technical school course. Rec. 3 hrs.; 3 credits.
- Farm Arithmetic B (Boys). Continuation of Farm Arithmetic A. Rec. 3 hrs.; 3 credits.

- Elementary Algebra A. Includes the study of symbols used in mathematics, the formula, simple equations, exercises and problems involving positive and negative numbers, the making and interpretation of graphs. Rec. 5 hrs.; 5 credits.
- Elementary Algebra B. Practice in multiplication, factoring, division, and fractions is followed by the study of fractional and literal equations, linear equations, ratio, proportion, square root, radicals, and quadratic equations. Rec. 5 hrs.; 5 credits.
- Plane Geometry A. Begins with an introductory study of geometric terms, constructions and methods of proof. Includes propositions involving triangles, perpendicular and parallel lines, polygons and the constructions based upon them. Rec. 5 hrs.; 5 credits.
- Plane Geometry B. A continuation of Geometry A including the study of circles, angles and arcs, the measurement of angles and arcs, loci, proportional line segments, similar polygons, and area. Rec. 5 hrs.; 5 credits.

MUSIC

Private musical instruction includes twelve private lessons and daily supervised practice periods. Music Hall is equipped with practice rooms for the use of music students. The fees for private lessons pay also for the use of a practice studio.

Piano. Elementary training in scales, chords, arpeggios, and selected studies. Technical exercises for the development of the hands, fingers, and arms. Studies and compositions adapted to the individual student. 2 credits; fee \$7.

Voice. Fundamentals of voice culture, breathing, placement, formation of vowels, diction, and flexibility. Studies and solos selected according to the ability of the individual student. 2 credits; fee \$7.

Violin. Methods and studies by Grun, Fischel, Sevcik, Dancla, Kayser, Kreutzer, Rode, and Fiorillo. Solos adapted to each grade. 2 credits; fee \$7.

Organ. For students sufficiently advanced in music. Hammond electric organ is used. 2 credits; fee \$7.

Band and Orchestral Instruments. Carefully arranged courses in each instrument. Cello, trombone, clarinet, trumpet, saxophone, drums, etc. 1 credit: fee \$7.

Freshman Vocal Study. A beginning course in vocal study for freshmen. Principles of musical notation, formation of scales, musical terms, sight reading, ear training, and the appreciation of music taught through participation in group singing. Rec. 1 hr.; 1 credit.

Music Appreciation. A general survey of music intended to enlighten the listener of music. Form and analysis, instruments, and voice taught with the use of the phonograph and demonstration. Rec. 2 hrs.; 2 credits.

Chorus. Both sacred and secular music are sung by this group. The chorus sings on Sunday evenings at the vesper service and furnishes music for assembly programs and concerts throughout the year. 1 credit.

Orchestra. Two orchestras, one for beginners and one for advanced students, are organized at the beginning of the school year. Credit is given for membership in these organizations. 1 credit.

Group lessons are offered in piano, voice, and instruments. These are small classes for the benefit of those who do not desire to register for private instruction. 1 credit; fee \$1.50.

PHYSICAL EDUCATION

The chief purpose of this course is to help develop the bodies of the students while in school. This objective is attained through supervised games and various physical exercises. The facilities of a large modern gymnasium, athletic field and swimming pool are available for this work. Two 2-hour periods per week, $\frac{1}{2}$ credit.

POULTRY HUSBANDRY

- Management of Laying Flock. Principles of general management, house construction, important commercial breeds and types, feeding and culling for egg production; common ailments and treatments. Rec. 3 hrs.; 3 credits.
- Incubation and Brooding. A study of the best methods of incubation and brooding, natural and artificial, includes selection of breeds, eggs for incubation, feeding and care of chicks, how to avoid losses. Rec. 2 hrs.; 2 credits.
- Advanced Poultry Production. A seminar course for students especially interested in poultry production. Prerequisites: Management of Laying Flock, and Incubation and Brooding. Rec. 2 hrs.; 2 credits.

SCIENCE

- General Science A. To acquaint the student with the many happenings of everyday life and their relation to the sciences of chemistry, physics, and biology. Rec. 3 hrs.; 3 credits.
- General Science B. Continuation of General Science A. Rec. 3 hrs.; 3 credits.
- Botany. A study of flowering plants, molds, mushrooms, rots or decays, and yeast. Rec. 3 hrs.; lab. 2, 2 hrs.; 5 credits.
- Chemistry A. A general introductory course in chemistry treating of the fundamental principles necessary for an understanding of chemistry in its relation to agriculture and home economics. Rec. 2 hrs.; lab. 1, 2 hrs.; 3 credits; fee \$1.
- Chemistry B. A continuation of Chemistry A, with a more direct application to the chemistry of plants, animals, and foods. Rec. 2 hrs.; lab. 1, 2 hrs.; 3 credits; fee \$1.
- Elementary Chemistry. Includes the fundamental principles taught in Chemistry A and B. Intended especially for girls who expect to enter such fields as nursing or home economics teaching. Rec. 3 hrs.; lab. 2, 2 hrs.; 5 credits.
- Physics. A practical course in physics as related to agricultural engineering. Covering a study of the mechanics of solids, liquids, gases, heat, sound, and light. Rec. 5 hrs.; 5 credits.
- Conservation of Natural Resources. A study of the natural resources of the state, with special emphasis on the student's responsibility and opportunities for their conservation. Rec. 2 hrs.; 2 credits.
- First Aid (Boys). A course in junior first aid, as outlined by the American Red Cross. The course includes artificial respiration, and diagnosis and temporary treatment of all kinds of accidents. Rec. 2 hrs.; 2 credits.

SOCIAL SCIENCE

- General History A. A study of world history during the ancient and medieval periods to the French Revolution, designed to show the social and political development of men and nations during these periods. Rec. 5 hrs.; 5 credits.
- General History B. A continuation of General History A from the French Revolution to the present time, with special emphasis on the growth and development of nationalism, and democratic and liberal reforms during this period. Rec. 5 hrs.; 5 credits.
- United States History. A course intended to present a clear account of the colonial backgrounds of the United States with greater emphasis on the recent industrial, economic, and social development of our nation. Rec. 5 hrs.; 5 credits.
- United States Government. A study of the background, organization, and functions of the national, state, and local governments. Rec. 5 hrs.; 5 credits.
- Rural Sociology. A study of social backgrounds, rural social institutions, and existing rural problems. Rec. 3 hrs.; 3 credits.

Freshman Lectures. A noncredit course for beginning students, designed to aid them in adjusting themselves to the school, and to life.

SUMMER HOME PROJECTS

AGRICULTURAL PROJECTS

From 2 to 10 credits will be allowed, depending on the quantity and quality of work. A charge of 25 cents is made for the record books made up by the school. Other record books and supplies are charged for at cost. Sequence in which project work must be taken is explained in Requirements for Graduation, on page 11.

Farm Accounts. Keep complete records of the farm business at home for a minimum of six months. Submit the completed book at the close of the project year. Four reports will be required for the six months. Students are encouraged to continue this project for the entire year for which they will receive additional credit.

Personal Accounts. Those boys who are working out and unable to carry the Farm Accounts project may keep records of personal expenses for a period of six months. Submit project book with evidence of saving, to indicate that at least 50 per cent of wages earned have been saved. Included in savings shall be evidences of old notes or bills paid, and clothing bought for personal use.

Swine—Cost of Production. Take over the management of the swine herd, keep farrowing records, earmark litters if possible (extra credit for doing so), keep accurate labor, feed, and financial records, and submit the same monthly. Final report is also required.

Swine—Ton Litter or Market Litter. For those who are enrolled in the Swine 4-H Club project, produce a ton litter, if possible, from one sow. Must be kept separate from other hogs. Keep labor, feed, and financial records, and submit same as called for.

Swine Sanitation. Take over the management of the entire herd. Keep farrowing records. Pigs are to be raised on clean and sanitary ground, on which pigs have not been grown the previous year. The McLean System, or a modification of it, is expected to be carried out. Keep labor, feed, and financial records and submit same monthly. Sow testing may also be carried on with this for extra credit.

Sheep Management. Take over the management of the flock. Ownership by student is desirable. Lambs should be creep fed for at least a month. Student should dock and castrate lambs and treat for stomach worms, and if necessary, dip sheep. Keep labor, feed, and financial records, and submit same as called for.

Dairy Herd Management. Student assumes care of dairy herd on his home farm for at least six months, making regular reports in regard to feeding and management and keeping accurate accounts of milk production, butterfat test, feed consumed, etc.

Beef. Intended for boys in the 4-H Beef Club project. Fatten a baby beef and keep accurate feed and labor records of the same. Submit records as called for by supervisor. Extra credit given to students who reach Junior Livestock Show with their beef animal.

Beef Feeding. Feed at least three beef feeding cattle. Must be kept in feeding yard. Submit weight at beginning and close of feeding period. Provide monthly feeding records and final summary report.

Incubation and Brooding. Course in poultry work required as prerequisite. In this project 200 or more chicks, or 100 poults, are brooded, fed, and raised by the student. Poultry must be kept on clean ground or screen, up to 12 weeks of age. A definite ration is fed throughout the project, and accurate feed and labor records are kept.

Beekeeping. In this project the student takes charge of an apiary of not less than ten hives. Care and management of the bees and production records are included as a part of the project.

- Fruit Growing.** Management of the home orchard for one season. The work will consist of pruning, cultivating, spraying, harvesting, and preparing the orchard for winter. Cost records are kept.
- Home Beautification.** Planning and planting foundation shrubs and plants around the farm home and other buildings, caring for the same during the growing season, and preparing for winter. The student makes a planting plan which is approved before the work is undertaken. At least one farm building must be completely planned for and planted.
- Tractor Operation.** A study of the management and operation of the tractor on the home farm, including cost of fuel and oil, repairs, etc., and complete records of work done.
- Farm Woodwork.** Make five small articles, or two larger ones, selected from list prepared by supervisor, or build one small farm building. Keep farm tools in good condition. Submit records during the summer and a final report before August 1.
- Potato.** Grow one-half acre or more of a standard variety to be compared with one-half acre or more of one of the new varieties of potatoes developed by the University of Minnesota, such as the Warba and Katahdin. If possible, select and show peck sample of potatoes at county fair. Keep cost of production and labor records, and submit reports as called for.
- Garden.** Grow a garden of at least 5,000 square feet. Prepare a garden plan and submit it to the project supervisor. Keep yield, labor, and financial record and submit reports as called for.
- Corn—Varietal Comparison.** Plant at least one acre of one of the improved hybrids of the University of Minnesota, alongside at least a similar amount of local farm variety or another commercial hybrid. Record of labor and costs required, and reports to be submitted as called for by the supervisor.
- Crops—Varietal Comparison.** In this project students will make a comparative yield trial of a standard recommended variety of grain with a farm variety. At least one acre or more to be grown alongside an equal amount of their home variety and wherever possible the two varieties cut and threshed separately for determining yields. Square yard samples may be taken by student for yield check. Prerequisite: Cereal Crops course.
- Windbreak Planting.** Plan, plant, and care for a standard windbreak around the farmstead. Plan to be submitted to supervisor before project is started. Keep labor and cash records and submit reports as called for.
- Weeds I.** Involves a study of the most noxious weeds on the home farm. Students registered for this project are required to identify and describe at least twenty-four different kinds and make a weed seed and plant collection of same.
- Weeds II.** Make a collection of forty-eight noxious weed seeds, together with the plants. If the student has already received credit for Weeds I project, the weed case from it must be submitted with the two required for this.
- Weeds III.** Select a patch of ground infested with quack grass or some other noxious weed. Practice cultural methods to eradicate the same; keep a financial and labor record and submit reports as called for during the summer.
- Farm Improvement.** Plan a comprehensive program of farm repair, improvement, and beautification work, such as fencing and building repairs, painting buildings, cutting and killing weeds, cleaning out orchard and woodlot, rearranging or repairing smaller outbuildings, etc. Submit plan to supervisor at beginning of the project. Keep labor and cash record and submit reports as called for by supervisor.

4-H Club Leadership. Must be a junior leader of a standard 4-H Club; must take part in county, state, or interstate events through an exhibit or as a member of a demonstration or judging team, must submit a report of all work done on the regular 4-H Club Work Leadership Report Blank, and in addition a report of regular 4-H Club project carried.

Community Club or Church Leadership. The student will submit the annual program of work and meetings, as outlined by the officers and committee of the organization. Record shall be made of the part the student had in this program. Wherever possible, the student shall help with all regular meetings and help plan and participate in any special events, such as local or county picnics or other activities sponsored by the organization. This report shall be supplemented by a scrap book, including newspaper and poster advertising, snapshots, and any other illustrative material which will better picture the student's work in the organization.

Alumni Relationships. Secure a list of all alumni and former students of W.C.S.A. living within a reasonable radius of one's home territory, contact them by letter or in person, arrange an Aggie-Alumni reunion, prepare publicity, send in three news items for *Projector*, and promote alumni relationships in every way possible. Reports required.

Recreational Reading. Student will read and report on three novels, one biography; three short stories or three essays or three plays. Selection of readings must be from the recommended list of Home Reading by the National Council of Teachers of English, for the year in which student is advanced in school. A \$2 deposit is required for the use of the W.C.S.A. library books and payment of postage for transportation of books. If all books are returned, refund will be made except postage costs when project is completed.

HOME ECONOMICS PROJECTS

Canning Fruits and Vegetables. The student will can not less than twelve quarts of vegetables, including two or more kinds, and not less than twelve quarts of fruit, including two or more kinds, and not less than six glasses of jelly. Records of methods, time, and costs are made a part of this project. 2 credits.

Baking. Includes the baking of not less than eight bakings of yeast bread and rolls, and the baking of quick breads until a standard product is obtained with a record of time, costs, and materials. 2 credits.

Foods and Cookery. Includes the preparing of salads, salad dressing, cakes, pies, cookies, puddings, and other simple desserts. Each product is made and scored at least three times. 2 credits.

Home Management. Includes the planning and preparation of all meals in the home for a period of two weeks. 2 or 3 credits.

Garment Making. Making a dress for self or for another member of the family. A record is to be kept of the time and cost. Credit will be given according to garment made and material used. 1 to 3 credits.

Clothing Repair. Not less than 15 articles of clothing and household linen are to be repaired. A record is kept of time and expenses, and money saved. 1 or 2 credits.

Laundrying. This project includes doing the family laundrying for four weeks, dry cleaning, stain removal, etc. 1 or 2 credits.

Children's Clothing. Consists of making a layette for a baby, or two suits or dresses for a small child. 2 credits.

Make-Over. In consultation with instructor the student will arrange to make over some garment before leaving school. After the work is completed, it is to be approved by the instructor before credit is given. 2 credits.

Home Furnishing. Includes the redecorating of a room, including walls, woodwork, and furniture, making of curtains, etc. 2 or 3 credits.

Working Out. In this project, with the approval of her employer, the girl keeps a careful and complete record of her daily tasks. 2 to 4 credits.

Personal Accounts. Records are kept of personal expenses for a period of six months. Bankbook or other evidence of saving should indicate that at least 50 per cent of earnings have been saved. Payment of old bills and notes and clothing bought shall be included as savings. Credit will be based on merit of record submitted.

GO TO SCHOOL

at the West Central School of Agriculture where school life is enjoyable and interesting as well as most worth while from an educational standpoint. The days are filled with pleasure, fun, work, and play. Someone in your community has attended the West Central School and he or she will tell you there is no other school that you will enjoy as much, and derive as much benefit from attending.

You will live together, work together, and play together with your classmates and will make many friendships that will last a lifetime.

Your eyes will be opened to the many opportunities to be found in agriculture, homemaking, and the related occupations. The soundest and best method of teaching known is employed in most courses, that of learning by doing. In the laboratories, shops, and classrooms you will actually learn to do the things you study about.

* * *

Come to the School Where You Learn By Doing!

If interested, clip and mail this coupon to

**Theodore H. Fenske, Superintendent
West Central School of Agriculture
Morris, Minnesota**

Name _____

Address _____ Route _____ Box No. _____

Father's Name _____

County _____

School District _____