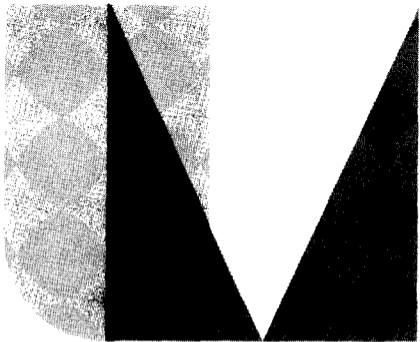


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 Ruth Stief, M.P.H., Assistant Professor  
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R. Willis Parlin, B.A., Research Associate

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Mary Ann Nielsen, B.S., M.Ed., Research Fellow  
Mary Clare Simons, B.S., Research Fellow  
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Henry Bauer, Ph.D., Lecturer; Director, Division of Medical Laboratories, Minnesota Department of Health, Minneapolis  
Lloyd F. Detwiller, M.A., M.P.H., Lecturer; Consultant-Administrator, Health Sciences Centre, University of British Columbia  
Dean S. Fleming, M.D., M.P.H., Lecturer; Director, Division of Disease Prevention and Control, Minnesota Department of Health, Minneapolis  
Leslie W. Foker, M.D., Lecturer; Northwest Industrial Clinic, Minneapolis  
Evelyn Hartman, M.S., M.D., Lecturer; Director, Maternal and Child Health, Division of Public Health, Minneapolis  
William A. Jordan, D.D.S., M.P.H., Lecturer; Chief, Section of Dental Health, Minnesota Department of Health, Minnesota  
Wilford E. Park, M.D., Lecturer; Chief, Occupational Health Service, Division of Public Health, Minneapolis



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### Public Health Nursing

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Delphie Fredlund, M.P.H., Assistant Professor  
Rita A. Kroska, C.N.M., M.P.H., Ph.D., Assistant Professor  
Katherine E. May, M.S., Assistant Professor  
Dorothy Downey, M.S., Instructor  
Barbara J. Leonard, M.S., Instructor  
Elaine C. Sime, M.S., Instructor  
Evi Altschuler, M.P.H., Lecturer; Assistant Chief and Education Director, Section of Public Health Nursing, Minnesota Department of Health, Minneapolis  
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### Special Lecturers, 1966-68

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William L. Anderson, Jr., Field Representative, Universal Oil Products (Johnson Division), St. Paul  
Kjell Baalsrud, Director, Norwegian Institute for Water Research, Blindern, Norway  
Alfred Bartsch, Director, Pacific Northwest Water Laboratory, U.S. Department of Interior, Corvallis, Oregon  
Edward Batschelet, Professor, Statistical Laboratory, Catholic University, Washington, D.C.  
Joseph D. Beasley, Director, Population and Family Studies Unit, School of Public Health and Tropical Medicine, Tulane University, New Orleans, Louisiana  
Lawrence M. Benson, Sales Engineer, Commercial Sales Department, Northern States Power Company, Minneapolis  
Clyde Berry, Associate Director, Institute of Agricultural Medicine, University of Iowa, Iowa City, Iowa  
Judith Bieber, Coordinator, Migrant Health, Minnesota Department of Health, Minneapolis  
Ralph J. Black, Solid Waste Program Engineer, National Center for Urban and Industrial Health, Public Health Service, Cincinnati, Ohio  
Christian Braun, Head, Biostatistics Division, Bristol Laboratories, Syracuse, New York  
Robert M. Brown, President, National Sanitation Foundation, Ann Arbor, Michigan  
Paul Canner, Professor, Division of Epidemiology and Biostatistics, University of Maryland, Baltimore, Maryland

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William Carson, Leader, Hospital Engineering Research Unit, University of Glasgow, Glasgow, Scotland

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Luther Christman, Dean, School of Nursing, Vanderbilt University, Nashville, Tennessee

Daniel Cohen, Professor of Epidemiology and Veterinary Medicine, University of Pennsylvania, Philadelphia, Pennsylvania

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Mary DesLauriers, Executive Director, Twin City Dairy Council, St. Paul

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Donald Townley, Solid Waste Program Engineer, National Center for Urban and Industrial Health, Public Health Service, Kansas City, Missouri

- Vladimir Volf, Deputy Director, Institute of Radiological Hygiene, Prague, Czechoslovakia
- Cecil H. Wadleigh, Director, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, Maryland
- Mrs. Walter W. Walker, Chairman, Governor's Council on Aging, St. Paul
- Harry Warnecke, Coordinator, Minnesota's Joint Program for Development and Coordination of Local Health Planning Agencies, Minnesota Hospital Association, Minneapolis
- Dan Wilcox, Assistant General Manager, Drillers Service, Inc., Hickory, North Carolina
- Marilyn Wilfong, Maternal and Child Health Nursing Consultant, Minnesota Department of Health, Minneapolis
- Theartrice Williams, Director, Phyllis Wheatley Settlement House, Minneapolis
- Warren Winkelstein, Professor of Preventive Medicine, University of Buffalo, Buffalo, New York
- Karen Winters, Psychiatric Clinical Specialist, Hennepin County Mental Health Center, Minneapolis
- Marvin Zelen, Biometrician, National Cancer Institute, Public Health Service, Washington, D.C.

### Special Lecturers in Hospital Administration

- Mark Anderson, Director, Chaplaincy Services, Swedish Hospital, Minneapolis
- Otto Arndal, Chief, Hospital Accreditation Program, Chicago, Illinois
- Harry Becker, Professor of Community Health, Albert Einstein Medical College, New York, New York
- John J. Boardman, Jr., Hospital Administrator, Kaiser Foundation, Los Angeles, California
- Ray E. Brown, Director, Program in Hospital Administration, Duke University, Durham, North Carolina
- George Bugbee, Director, Program in Hospital Administration, University of Chicago, Chicago, Illinois
- O. J. Campbell, Surgeon, Minneapolis
- John B. Coleman, Radiologist, St. Paul
- Thomas P. Cook, Executive Secretary, Hennepin County Medical Society, Minneapolis
- David M. Craig, Internist, St. Paul
- Richard T. Crist, President, Minnesota Hospital Service Association, St. Paul
- Edwin L. Crosby, Executive Director, American Hospital Association, Chicago, Illinois
- Ann Crowley, Director, Dietetics, University of Iowa, Iowa City, Iowa
- Nelson H. Cruikshank, Director, Department of Social Security, AFL-CIO, Washington, D.C.
- John M. Danielson, Executive Vice-President, Evanston Hospital Association, Evanston, Illinois
- C. Wesley Eisele, Director, Post-graduate Medical Education, University of Colorado, Denver, Colorado
- Douglas A. Fenderson, Director of Education, American Rehabilitation Foundation, Minneapolis
- Bruce E. Fischer, Administrator, Anoka State Hospital, Anoka
- Joseph F. Follmann, Jr., Director of Information and Research, Health Insurance Institute, New York, New York

- James E. Hague, Editor, Journal of the American Hospital Association, Chicago, Illinois
- James A. Hamilton, Professor Emeritus, Program in Hospital Administration, South Duxbury, Massachusetts
- Edith Lentz Hamilton (former Associate Professor, Program in Hospital Administration, University of Minnesota), South Duxbury, Massachusetts
- Mrs. Russell Hanson, President, Hospital Auxiliary, Benson, Minnesota
- Warren B. Hempstead, Sales Manager, Physicians and Hospitals Supply Company, Inc., Minneapolis
- Eugene H. Keating, Attorney-at-Law, Minneapolis
- Eleanor Lambertson, Director, Division of Nursing Education, Columbia University, New York, New York
- John R. Mannix, Executive Vice-President, Blue Cross of Northeast Ohio, Cleveland, Ohio
- Walter J. McNerney, President, Blue Cross Association, Chicago, Illinois
- Winston R. Miller, Program Director, Northland Regional Medical Program, St. Paul
- David Y. Morris, President, University of Minnesota Employees Union, Local 450, Minneapolis
- Lila Niederbaumer, Director of Nursing, University of Kansas Medical Center, Lawrence, Kansas
- Andrew Pattullo, Director, Division of Hospitals, W. K. Kellogg Foundation, Battle Creek, Michigan
- John W. Poor, Director, Division of Public Assistance, Minnesota Department of Public Welfare, St. Paul
- Clarence J. Rowe, Psychiatrist, St. Paul
- Martin A. Segal, Pathologist, Methodist Hospital, Minneapolis
- Virgil Slee, Director, Commission on Professional and Hospital Activities, Inc., Ann Arbor, Michigan
- J. E. Smits, Regional Hospital Administrator, Kaiser Foundation Hospitals, Los Angeles, California
- Richard J. Stull, Executive Vice-President, American College of Hospital Administrators, Chicago, Illinois
- George G. Ulmer, President, Physicians and Hospitals Supply Company, Inc., Minneapolis
- David J. Vail, Medical Director, Minnesota Department of Public Welfare, St. Paul
- Donald L. Van Hulzen, Executive Director, Joint Staff of the Metropolitan St. Paul and Minneapolis Planning Councils, St. Paul
- Geraldine B. Wedel, Assistant Executive Director, Minnesota Nurses Association, St. Paul
- Donald E. Wood, Executive Director, Twin City Hospital Association, St. Paul

# School of Public Health

## GENERAL INFORMATION

The School of Public Health offers a wide selection of general and professional courses in the fields of public health and preventive medicine. The general courses are designed for the student who desires 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.

**Development of the School**—Instruction in public health and preventive medicine has been conducted at the University of Minnesota for more than half a century. The course in public health nursing, one of the first in the country, was established in 1918. In 1922 a separate Department of Preventive Medicine and Public Health was established in response to the increasing demand for health education and for trained leaders in public health. Graduate courses in public health have been offered since that time. In 1935 the University of Minnesota was selected by the health officers of the adjacent states as the institution to which they desired to send personnel for public health training under provisions of the Social Security Act. Curricula for the training of health officers and public health engineers were established at that time. In 1944 the Board of Regents authorized expansion of the Department of Preventive Medicine and Public Health into the School of Public Health.

All professional degree programs in the school are fully accredited by the appropriate national accrediting agencies.

The school occupies two and a half floors of the Mayo Memorial building of the University of Minnesota Medical Center. Here are located teaching and research laboratories, classrooms, conference rooms, and the offices of the school. Environmental health research laboratories are located in the adjacent University Health Service building and the new Space Science Center. The Laboratory of Physiological Hygiene is separately situated at the Memorial Stadium only 3 blocks distant.

Teaching programs have been developed in close collaboration with other departments in the College of Medical Sciences and with departments dealing with collateral fields of knowledge, in particular with the biological sciences, dentistry, education, engineering, journalism, the social sciences, and veterinary medicine. Practical field experience and observation are provided through a close working relationship with many official and voluntary public health agencies. The Minnesota Department of Health maintains its offices and laboratories on the Minneapolis Campus, and its staff participates actively in teaching. The public health services of Minneapolis and St. Paul share in teaching responsibilities.



## **School of Public Health**

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**Professional Programs in Public Health**—The School of Public Health provides programs of graduate study for physicians, dentists, public health nurses, health educators, veterinarians, public health statisticians, hospital administrators, public health nutritionists, and scientists, engineers, and sanitarians in the field of environmental health. Programs of study usually can be arranged for other persons with appropriate professional training and public health experience.

The programs of study emphasize training of a coordinated team of professional workers, each member of which has some understanding and appreciation of the contributions that each of the other disciplines makes to the broad field of public health. To this end all students pursuing courses of study leading to a professional degree in public health are required to take the basic core course PubH 100A, B, and C and courses in environmental health, epidemiology, health education, public health administration, public health nursing, and statistics. To this nucleus of required courses, which so far as possible all advanced students take together, each of the programs adds courses from its respective field of special interest.

All programs leading to a Master's degree are arranged as orderly sequences of courses extending over a minimum of 11 months. The programs in public health nursing and in hospital administration extend over 2 academic years and begin with the fall quarter in September. Students in public health administration, dental health, environmental health, veterinary public health, public health nutrition, and health education are expected to begin with the second term of Summer Session and to continue through the ensuing spring quarter or Summer Session. Students wishing to acquire special competence in one of the fields of public health such as epidemiology, maternal and child health, or some aspect of environmental health should plan one or more extra years beyond the Master's degree.

**Program in Hospital Administration**—A 2-year graduate program in hospital administration was established in the school in 1946 with the aid of the Kellogg Foundation. This program consists of a year of academic study, supplemented by a year of supervised practical experience. The academic year combines specialized instruction in hospital and health care administration and basic courses in the fundamentals of public health.

**Programs in Biometry**—Graduate study combining theory and methodology for the application of statistics, mathematics, and computer science in medical, biological, and public health research is offered by the Biometry Division. The division can currently offer a number of traineeships sponsored by the National Institutes of Health. Requirements for entering a graduate program leading to the degrees of master of science and doctor of philosophy in biometry can be found in the *Graduate School Bulletin*.

**Laboratory of Physiological Hygiene**—In 1937 the Laboratory of Physiological Hygiene was established at the University as a research and teaching unit and was made a division of the School of Public Health in 1946. The laboratory offers unusual opportunities for advanced study in the fields of nutrition, epidemiology of heart disease, gerontology, physiology of exercise, and problems of metabolism. Facilities and personnel are specialized for experimental studies on man. Programs of study are available which lead to the degree of

## *General Information*

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master of science or doctor of philosophy in physiology, physiological chemistry, or, in particularly well-qualified cases, physiological hygiene.

**Summer Session**—The Summer Session of the University of Minnesota consists of 2 terms, each of 5 weeks. In each of these terms certain courses are concentrated that during the regular year are spread over 1 or 2 quarters. It is not possible, however, for a student to complete the requirements for an advanced degree by attending only a series of summer sessions. Special workshops or intensive programs of study are offered during the summer.

**In-Service Courses**—In-service courses are offered at the Nolte Center for Continuing Education through the cooperation of the School of Public Health and the Department of Continuation Medical Education. These courses vary in length from 2 days to 2 or 3 weeks and are offered to physicians, engineers, nurses, hospital administrators, educators, or other groups within the public health field. The faculty for these courses is recruited from the regular University staff, supplemented by special lecturers. The school likewise offers courses through the Extension Division. Credits earned through extension courses can be transferred to count toward degrees. No professional courses are offered by correspondence.

**Traineeships**—Under Sections 306 and 307, Public Health Service Act, funds are available through the Public Health Service to provide a limited number of traineeships for graduate students in schools of public health who are preparing for public health employment. These cover tuition and university fees, travel to the school, and a generous living allowance depending upon the number of dependents and the student's academic background. Section 306 provides traineeships for all types of public health personnel except nurses working for advanced degrees. Stipends under this section are calculated on the basis of \$6,000 a year for students with a Doctor's degree and \$3,000 a year for those with a Bachelor's degree. A dependency allowance calculated on the basis of \$500 per year per dependent is also provided. Under Section 307, traineeships are available to graduate nurses in the Master's program at \$250 a month plus dependency allowance and tuition.

All traineeships are awarded directly by the school. Students who are interested in applying for traineeships should write to the School of Public Health, 1325 Mayo Memorial, University of Minnesota, Minneapolis, Minnesota 55455.

Students from other countries who desire financial support for their training should apply, through the respective Ministries of Health of their country, to the World Health Organization or to the Agency for International Development of the U.S. Department of State for such support. The school has no money that it can award directly to support the training of students from other countries.

**Special Traineeships**—In addition to the foregoing, the school has been granted special traineeships by the National Institutes of Health for training in epidemiology and biometry. Funds from the Children's Bureau provide special traineeships in the areas of maternal and child health and nutrition. Special traineeships are also available from the Public Health Service for training in the fields of radiological health, air pollution, hospital engineering, and accident prevention. Training grants from the Department of the Interior and from the

## School of Public Health

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National Aeronautics and Space Administration provide support for students in biology, and the school has an approved program for students receiving direct fellowship support from the Atomic Energy Commission. The amounts of such stipends vary with the field of study. Inquiries should be addressed directly to the school.

### Admission

**Graduate Program**—Those who wish to become candidates for the degrees of master of public health or master of hospital administration should apply directly to the School of Public Health for admission. Application blanks will be furnished by the school upon request. Two certified transcripts attesting to the applicant's college record and his graduation must be submitted with the application together with the \$10 credentials examination fee which is non-refundable. At least two letters of recommendation, supporting the application, should also be sent directly to the school from persons who are capable of assessing the ability of the candidate to do graduate work, and who can assess his past and potential success in his chosen discipline. After the application and all supporting papers have been received, applicants will be notified of action taken.

Detailed admission requirements and degree requirements for the several programs are listed in the section under Programs of Study.

Candidates for the degree of doctor of philosophy or master of science should apply directly to the Graduate School.

**Special Students**—Those who do not present themselves immediately as candidates for degrees but who wish to pursue studies centered in the School of Public Health may be admitted as Adult Special students. Students from foreign countries other than Canada are always admitted as Adult Special students for their first quarter of residence and will be continued as such until accepted as candidates for degrees. The academic record of each Adult Special student will be reviewed after the close of each quarter of residence to determine his eligibility for transfer to degree candidacy.

Credits earned as Adult Special students will count toward the master of public health degree when the student is transferred to degree candidacy. Adult Special students who wish to transfer to candidacy for the master of science degree should consult the *Graduate School Bulletin* for regulations governing such transfer.

**Transfer of Credits**—No transfer of credit from other institutions to apply to any Master's degree at Minnesota is permitted. Consult the *Graduate School Bulletin* for regulations concerning transfer of credit toward a Ph.D. degree.

### Degree Requirements

**Doctor of Philosophy**—A program of study and research leading to the doctor of philosophy degree may be elected with a major in biometry, environmental health, epidemiology, hospital administration, or physiological hygiene. Entrance to work for this degree with a major in any of the above fields will be limited to students who have already completed a Master's degree or the equivalent in public health or related fields. Those whose interest is in the field

of maternal and child health should plan their work through the Department of Pediatrics of the Graduate Medical School. A major in biometry may be elected by those whose chief interests center in the application of statistics, mathematics, and computer science to biological fields. Similarly, a major in physiological hygiene may be elected by qualified students in that field though many such students may prefer a major in physiological chemistry or physiology. The doctoral program in hospital administration is focused on the hospital in its relationship to the community rather than problems of internal management.

A program of at least 3 years of study and research is required. A minimum of 3 quarters must be spent in residence at the University of Minnesota. The general requirements are set forth in the *Graduate School Bulletin*.

The University of Minnesota does *not* grant the doctor of public health degree. With the exception of the professional degrees of M.D., D.D.S., and D.V.M., it is the policy of the University of Minnesota that the only doctoral degree offered is the Ph.D., regardless of the field of specialization.

**Master of Science**—This degree is available under two plans, Plan A involving preparation of a thesis plus a minimum of course work, and Plan B which requires more extended course work and the preparation of papers of the quality, though not the range, of a Master's thesis. A minimum of 3 quarters of study in residence at the University of Minnesota is required under each plan. Students may major in public health (concentrating upon one of the component fields), or in biometry, environmental health, epidemiology, or in physiological hygiene. For detailed information, see the *Graduate School Bulletin*.

**Master of Public Health**—This is an advanced professional degree, granted in recognition of scholastic attainment in public health to individuals with suitable previous professional education and experience. The University of Minnesota in its requirements for admission to candidacy for the master of public health degree is guided by the standards established by the American Public Health Association.

Applicants for the master of public health degree should possess:

- “(i) A graduate degree, from an acceptable institution, in a discipline relevant to public health, or
- “(ii) A bachelor's degree, from an acceptable institution, with substantial knowledge in a discipline relevant to public health, either through study or experience or a combination of these.”

All candidates for the master of public health degree must complete a program of at least 11 months of approved study in residence at the University of Minnesota. This must include a *minimum* of 45 credits in courses of graduate grade offered by the University. The total program of study for each must include PubH 100A, B, and C, and courses in environmental health, epidemiology, health education, public health administration, public health nursing, and statistics. The courses selected must have the approval of the student's adviser.

An overall grade average of not less than 2.75 (based on: A = 4, B = 3, C = 2, D = 1) must be attained, including a grade average of 2.50 in all public health courses so graded and a grade average of 2.50 in the foregoing required courses. If a student repeats a course, the honor point average is based on the original grade; the second grade does not count in the average.

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Papers of the quality, though not the scope, of a Master's thesis must be prepared in connection with courses totaling 9 credits, as determined by the student's adviser. The student must also successfully pass a comprehensive examination at the end of the period of study.

Master of Hospital Administration—See page 31.

**Bachelor's Degree—Major in Biometry**—Registration for courses leading to the bachelor of arts degree with a major in biometry is in the College of Liberal Arts (see bulletin of that college). The curriculum is of a broadly elective type and designed for a normal period of study covering 4 academic years.

### Expenses (1968-69)

(Subject to change)

1. Tuition fee per quarter (except for hospital administration)	
Resident (full schedule) .....	\$104.00
Nonresident (full schedule) .....	280.00
Resident, per credit hour .....	8.75
Nonresident, per credit hour .....	23.50
2. Tuition fee per quarter (hospital administration only)	
Resident (full schedule) .....	\$168.00
Nonresident (full schedule) .....	380.00
Resident, per credit hour .....	14.00
Nonresident, per credit hour .....	31.75
3. Credentials examination fee (to be sent with application and nonrefundable) .....	10.00
4. Incidental fee per quarter .....	30.50
5. Summer Session, per term	
Tuition (more than 4 credits) .....	72.00
Incidental fee .....	15.25
6. Special course fees are charged as follows:	
PubH 138 .....	150.00
PubH 169, 190 (in addition to regular tuition) .....	100.00
PubH 230 (September field course—in lieu of tuition) .....	200.00
7. Graduation fee	
Small diploma .....	10.00
Large diploma .....	15.00

If a student receives a traineeship which provides for direct payment of tuition and fees, a statement authorizing the University to submit bills for such charges should be sent to the School of Public Health in advance of registration. The tuition amounts indicated are for registration in the School of Public Health. For tuition rates for other colleges, the *General Information Bulletin* should be consulted.

The regular University year, extending from September to June, is divided into 3 terms called quarters. The Summer Session consists of 2 terms, each of 5 weeks' duration. On the specified dates (see Calendar in *General Information Bulletin*) prior to the opening of each quarter or summer term, 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.

### Partial Calendar, 1968-69

A few of the pertinent dates of the 1968-69 academic year are as follows:

	<i>Beginning Date</i>	<i>Ending Date</i>
First Term Summer Session 1968	June 17	July 19
Second Term Summer Session 1968	July 22	August 23
Interim Period (PubH 230) 1968	August 26	September 16
Fall Quarter 1968	September 23	December 14
Winter Quarter 1969	January 3	March 15
Spring Quarter 1969	March 24	June 7
First Term Summer Session 1969	June 16	July 18
Second Term Summer Session 1969	July 21	August 22

The exact dates for the 1969-70 academic year are yet to be determined, but the training periods will be comparable.

### Residence Accommodations

Most out-of-town students live either in University-maintained residence halls or in private rooming houses. Information concerning residence halls and University housing for married students may be obtained from the Director of University Housing, 180 Wesbrook Hall, University of Minnesota, Minneapolis, Minnesota 55455.

Information about private rooming houses may be obtained from the Student Housing Bureau at 209 Eddy Hall, which can also assist married students in finding suitable housing off campus.

### Further Information

For further details regarding admission, expenses, housing facilities, health service, scholarships, etc., consult the *General Information Bulletin*, which may be obtained upon request. Address: Office of Admissions and Records, University of Minnesota, Minneapolis, Minnesota 55455.

# PROGRAMS OF STUDY

## *Programs in Biometry*

Major Advisers—Jacob E. Bearman, Richard B. McHugh,  
Eugene Ackerman, Glenn E. Bartsch, James R. Boen, Eugene A. Johnson,  
Marcus O. Kjelsberg, Marian W. Thornton, Franklin W. Briese, Robert L. Evans,  
Frank Martin, Richard E. Pogue

### Requirements for Admission

1. Bachelor's degree from an acceptable institution.
2. Satisfactory background in (a) mathematics, preferably through integral calculus; (b) the social sciences; and (c) the natural sciences, particularly biology.

## PROGRAM LEADING TO MASTER OF PUBLIC HEALTH DEGREE

### Plan of Instruction

The course of study leading to the master of public health degree includes basic courses in public health supplemented by courses in statistics and such other studies as seem best suited to give the student a well-balanced program for work in public health statistics. Students should plan to be in attendance for 11 months beginning with the second term of the Summer Session.

Among the courses of special interest and value are the following:

#### RECOMMENDED COURSES

(Credits shown in parentheses; \*\* indicates required courses)

PubH 100A, B, C**—Elements of Public Health (6)	PubH 168—Orientation to Medical Sciences (3)
PubH 102A**—Environmental Health (2)	PubH 170A**—Administration of Public Health Nursing (1)
PubH 104,** 105—Epidemiology I and II (6)	PubH 203A—Research Design in Biometry (3)
PubH 106**—Public Health Administration (3)	PubH 210—Seminar: Public Health
PubH 110A, B, C—Biometry I, II and III (9)	IE 130—Introduction to Operations Research (4)
PubH 111A, B, C—Biometry Laboratory I, II, and III (6)	PA 270A—Public Administration Seminar: Organization Theory and Administrative Behavior (3)
PubH 120A, B, C—Biomedical Computing (9)	Soc 111—Population Theory (3)
PubH 141—Social and Economic Aspects of Medical Care (3)	Soc 112—World Population Problems (3)
PubH 144—History of Biostatistics (3)	Stat 121, 122, 123 or 131, 132, 133—Theory of Statistics (9)
PubH 150A,** B, C—Health Statistics I, II, and III (9)	

The usual program of study will include PubH 110 A, B, C, 111A, B, C, PubH 120A, B, C, and PubH 150A, B, C in addition to the required public health core courses.

## PROGRAMS LEADING TO THE MASTER OF SCIENCE AND PH.D. DEGREES

The degrees of master of science and Ph.D. with a major in biometry are offered through the Graduate School. Detailed information about these programs is given in the *Graduate School Bulletin*. The master of science program normally requires 2 years to complete and includes course work in mathematical statistics, biomedical computing, and mathematical biology. The Ph.D. program normally requires 4 years after the Bachelor's degree.

### *Program in Dental Public Health*

Major Advisers—Lawrence H. Meskin, Richard H. Gordon, William A. Jordan

#### Requirements for Admission

1. The degree of doctor of dental surgery or doctor of dental medicine from an acceptable institution.
2. Evidence of suitable undergraduate proficiency in clinical and basic science courses.
3. Evidence of personal and professional qualifications as supplied by three reference letters and, if requested, a personal interview.
4. Letter indicating applicant's interest and/or motivation in seeking the master of public health degree.

#### Plan of Instruction

This program is designed to prepare a select group of dentists for responsible involvement and leadership roles in comprehensive community health programs. The required courses form the framework of a general public health education. The variety of available elective courses assures individualization of course content in meeting the specific personal and professional interests and goals of each student.

The normal course of study leading to the degree of master of public health extends over an 11-month period beginning with the second term of the Summer Session. The interval between the Summer Session and fall quarter is reserved for field experience and study. Winter and spring quarters are required to complete the core and elective courses necessary for graduation. Among the courses of special interest and value are the following:

#### RECOMMENDED COURSES

(Credits shown in parentheses; \*\* indicates required courses)

PubH 100A, B, C\*\*—Elements of Public Health (6)  
PubH 104,\*\* 105—Epidemiology (6)  
PubH 106\*\*—Public Health Administration (3)

PubH 107—Maternal and Child Health (3)  
PubH 114\*\*—Environmental Health Programs (3)  
PubH 122—Public Health Administration Problems (3)



## School of Public Health

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- PubH 123—Topics in Public Health (ar)  
PubH 125<sup>oo</sup>—Public Health Education (2)  
PubH 133—Mental Health (3)  
PubH 134—Human Genetics and Public Health (3)  
PubH 136—Handicapped Children (ar)  
PubH 140<sup>oo</sup>—Vital Statistics I (3)  
PubH 141—Social and Economic Aspects of Medical Care (3)  
PubH 143—Measurement and Application of Ionizing Radiation (2; 3 for lect and lab)  
PubH 170<sup>oo</sup>—Administration of Public Health Nursing (2)  
PubH 173—Culture and Public Health I (3)  
PubH 182—Philosophy and Concepts of Preventive Dentistry (3)  
PubH 183—Dental Health Literature Seminar (ar)  
PubH 184—Dental Health Programs (ar)  
PubH 191—Applied Human Nutrition (3)  
PubH 210<sup>oo</sup>—Seminar: Public Health  
PubH 215—Maternal and Child Health Problems (3)  
PubH 241—Epidemiology of Noncommunicable Diseases (3)  
PubH 267—Health and Human Behavior (3)  
PubH 269—Political Aspects of Health Services (3)  
PubH 285—Culture and Public Health II (3)  
Anth 150—Cultural Change and Development (3)  
Anth 164—Social Anthropology (3)  
Anth 165—Culture and Personality (3)  
Dent 177—Community Communication (2)  
EPsy 193—Psychology of Human Learning (3)  
EPsy 264—Assessment of the Handicapped (3)  
Pol 124—Government and Welfare (3)  
Pol 131—Public Administration (3)  
Psy 125-126—Differential Psychology (6)  
Psy 140—Social Psychology (3)  
Psy 167—Measurement of Opinions and Attitudes (3)  
Soc 115—Social Aspects of Housing and Standards of Living (3)  
Soc 140—Social Organization (3)  
Soc 152—Sociology of Medicine and Medical Institutions (3)  
Spch 169—Speech and Language in Human Behavior (3)

## *Programs in Environmental Health*

Major Advisers—Richard C. Bond, George S. Michaelsen, Theodore A. Olson, Harold J. Paulus, Irving J. Pflug, Conrad P. Straub, Donald E. Barber, Velvl W. Greene, Gustave L. Scheffler, Rexford D. Singer

### **PROGRAMS LEADING TO MASTER OF PUBLIC HEALTH OR MASTER OF SCIENCE DEGREE**

#### **Requirements for Admission**

1. A Bachelor's degree from an acceptable institution in engineering or with a major in one of the natural sciences or mathematics.
2. Adequate training in basic and applied sciences, preferably including a basic course in bacteriology.

#### **Plan of Instruction**

The course of instruction leading to a Master's degree requires a minimum of 11 months of study. Students should plan to be in attendance for the second term of the Summer Session preceding the regular academic year, and to remain in attendance during the interim period between the end of the second term of Summer Session and the beginning of fall quarter.

The environmental health programs are designed to cover the many aspects of environmental control. By the use of electives, the student may obtain specialized training in accident prevention, air pollution, environmental biology,

hospital engineering, occupational health, or radiological health. The student not wishing to specialize may select training in the general field of public health with emphasis in the areas of water supply, sewerage, solid wastes, general sanitation, milk and food, environmental microbiology, institutional sanitation, or administration. Course work in fields related to environmental health is available in other departments of the University and properly qualified students are eligible to include this work in their programs.

**Master of Science**—The master of science degree, with major emphasis in environmental health, is offered through the Graduate School. Students planning to continue their studies for the Ph.D. degree, and/or to pursue an academic career of teaching and research in environmental health, should consider enrolling in the Graduate School as candidates for the M.S. degree. The program for this degree consists of at least 21 credit hours in environmental health, including PubH 100A, B, and C, PubH 104, and either PubH 106 or PubH 116, with elective courses in the candidate's area of special interest. At least 18 credit hours in two or more related fields are also required. Persons interested in this program should consult the environmental health listing in the *Graduate School Bulletin*.

**Master of Public Health**—Those persons having professional experience and planning to continue public health work with governmental agencies in an administrative or consultative capacity should consider enrolling for the M.P.H. degree. The master of public health program includes all of the core courses in public health and selected electives in the candidate's area of interest. Among the courses of special interest and value are the following:

#### RECOMMENDED COURSES

(Credits shown in parentheses; \*\* indicates courses required for M.P.H. degree)

- |  |   |
|--|---|
| PubH 100A, B, C**—Elements of Public Health (6)              | PubH 122—Public Health Administration Problems (3)                            |
| PubH 102**—Environmental Health (3)                          | PubH 123—Topics in Public Health (ar)   |
| PubH 104,** 105—Epidemiology I and II (6)                    | PubH 125**—Introduction to Public Health Education (2)                        |
| PubH 106**—Public Health Administration (3)                  | PubH 126—Occupational Health Programs (3)                                     |
| PubH 110A, B, C—Biometry I, II, and III (9)                  | PubH 138—Hospital Engineering Problems (ar)                                   |
| PubH 111A, B, C—Biometry Laboratory I, II, and III (6)       | PubH 140—Vital Statistics I (3)   |
| PubH 112—Environmental Aspects of Water Systems (3)          | PubH 143—Measurement and Application of Ionizing Radiation (2; 3 with lab)    |
| PubH 113—Environmental Aspects of Liquid Waste Systems (3)   | PubH 145—Low-Level Radioactivity and Radiation Measurements (3)               |
| PubH 115—Food Sanitation (3)                                 | PubH 147—Environmental Radioactivity (3)                                      |
| PubH 115A—Institutional Food Protection Programs (2)         | PubH 149—Public Health Aspects of Housing and the Residential Environment (3) |
| PubH 116—Administration of Environmental Health Programs (3) | PubH 151—Health Aspects of Air Control in Hospitals (2)                       |
| PubH 117A, B, C—Environmental Biology (9)                    | PubH 152—Industrial Hygiene Engineering (3)                                   |
| PubH 118—Environmental Microbiology (3)                      | PubH 153—Principles and Methods of Accident Prevention (ar)                   |
| PubH 120A, B, C—Biomedical Computing (9)                     | PubH 154—Special Studies in Accident Prevention (ar)                          |

## School of Public Health

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- PubH 155—Introduction to the Air Pollution Problem (3)  
PubH 156—Air Pollution Controls and Surveys (3)  
PubH 157—Radiation Protection Criteria for Hospitals (2)  
PubH 158—Hospital Safety (3)  
PubH 159—Chemical Laboratory Safety (1)  
PubH 170A<sup>o</sup>—Administration of Public Health Nursing (1)  
PubH 180<sup>o</sup>—Introduction to Biometry (6) (110A or 111A or 140 may be substituted)  
PubH 185—Air Analysis (3)  
PubH 186—Problems of Air Pollution Control (ar)  
PubH 200—Research (ar)  
PubH 210—Seminar: Public Health  
PubH 212—Seminar: Environmental Health (ar)  
PubH 230—Field Practice in Environmental Health (ar)  
PubH 231—Ground Water Development (ar)  
PubH 232—Field Work in Ground Water Development (ar)  
PubH 233—Water Quality Investigation and Research Techniques (6)  
PubH 234—Water Quality Research (6)  
PubH 238—Radiation Dosimetry (3)  
PubH 238A—Radiation Dosimetry Laboratory (1)  
PubH 241—Epidemiology of Noncommunicable Diseases (3)

The student's program of study can and usually does include additional course offerings from other departments of the University. Descriptions of course offerings in the other departments may be found in the *Graduate School Bulletin*.

### Variations in Curricula Within Environmental Health

**Accident Prevention**—This curriculum is designed to meet the needs of accident prevention specialists in public health agencies. Instruction includes study in such areas as institutional and industrial safety, laboratory safety, principles of accident prevention and injury control, toxicology, and special tutorial work on other problem areas. Additional course work in the areas of epidemiology, biometry, community planning and organization, human behavior, health education, environmental controls, civil engineering, and public administration may be selected to meet the special interests or needs of the student.

**Air Pollution**—Specialized training in air pollution and its control is available for students with a Bachelor's degree in civil, chemical, or mechanical engineering, chemistry, physics, and certain biological sciences with strength in mathematics and chemistry. Each program is patterned to the student's academic background with elective courses in particle technology, physics of the atmosphere, meteorology, toxicology, and graduate courses in chemistry, physics, and chemical engineering. Each student in the air pollution training program receives instruction on the management of air pollution control programs, design and operation of air sampling networks, theory and operation of air sampling equipment and of control methods and equipment. The student also participates in group solutions to assigned problems involving air pollution control and in giving instruction when feasible.

**Environmental Biology**—This is a program of study emphasizing the biological aspects of environmental health. A specialized curriculum is developed for each individual as a means of preparation for one or more professional fields of environmental health activities on the local, national, and international scene. Among these are such fields as water supply biology, waste disposal biology, vector control, biological phenomena related to epidemiology, air pollution,

housing, food control, etc. The training will be supplemented by courses in such other departments of the University as biochemistry, botany, entomology, food sciences, microbiology, or zoology as required to satisfy individual needs.

**Hospital Engineering**—This curriculum is designed to provide special training to prepare graduate engineers to serve the hospital administrator or the director of a hospital program during planning and construction and provide administrative direction to the overall operation of the hospital physical plant. Although the program is tailored to the needs of the individual student and his agency or institution, four areas of preparation are provided in the 2 years of required academic work. These are technical engineering, public health, hospital administration, and hospital environmental engineering. Courses in civil, electrical, industrial, and mechanical engineering, architecture, microbiology, and administration can be selected according to individual needs.

**Occupational Health**—This is a program for students with engineering and physical or biological science backgrounds who wish to specialize in occupational health and industrial hygiene. The program includes instruction in the professional, social, economic, and legal aspects of occupational health programs and the technical aspects of the evaluation and control of specific industrial health hazards. The students also participate in laboratory and field exercises including air flow measurements, calibration of instruments, and the analysis of different dusts, fumes, gases, and vapors. The students will have an opportunity to take elective courses in heating, ventilating, and air conditioning and to visit industrial plants.

**Radiological Health**—The primary purpose of this training program is to integrate the broad spectrum of knowledge required of the health physicist into a logical pattern directed toward understanding the implications of and control methods associated with protection of man from radiation hazards, to stimulate new ideas in both applied and pure research in radiological health, and to provide an opportunity to pursue a research topic in radiological health from inception to conclusion. Broad and intensive courses are offered to prepare students for positions of responsible leadership in professional practice, administration, and research. The program can be adapted to any of a number of interests, and opportunities for interdepartmental programs of work and study in such areas as physics, biophysics, pharmacology, and radiology are readily arranged. Areas of special endeavor include internal emitters, medical uses of isotopes, and the dosimetry, radiobiology, and radiation protection problems associated with the use of accelerators, medical sources of radiation, and Van de Graaff generators.

### **Traineeships**

Traineeships and fellowships are available for qualified students in environmental health. These traineeships are generally for 1 year and are granted by the school through the Public Health Service Title I program and through Special Purpose Traineeship Grants from the Public Health Service and the Department of the Interior to the school in the specialized areas of air pollution, ra-

## *School of Public Health*

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biological health, hospital engineering, accident prevention, and environmental biology. Special traineeships also are available directly from the Atomic Energy Commission.

### **DOCTORAL DEGREE PROGRAM**

#### **Requirements for Admission**

Candidates for this degree with a major in environmental health will present, as a minimum, a Bachelor's degree in some field of engineering or with a major in a physical or biological science and a minor in some other science. Candidates will be required to demonstrate a reading knowledge of two modern foreign languages, or of one foreign language and option of a special research technique or a collateral field of knowledge.

#### **Plan of Instruction**

The program and course offerings are planned to prepare a select group of individuals for research, teaching, and high level administrative positions in the field of environmental health. The course work will be adapted to the needs of the individual student and will take cognizance of the several fields of specialization within environmental health. Candidacy for the Ph.D. degree implies the completion of a Master's degree or equivalent in public health or related fields. Minors will be chosen from a fundamental discipline appropriate to the student's previous academic training.

### ***Program in Epidemiology***

Major Advisers—Leonard M. Schuman, Gaylord W. Anderson

#### **Requirements for Admission**

Specialized training in epidemiology leading to the Ph.D. degree is offered to qualified graduates in medicine, dentistry, and veterinary medicine. Other students with adequate background in biological or physical sciences or with demonstrated competence in investigative work may be admitted. Since positions in the program are relatively limited, selection of candidates is competitive with respect to background of instruction and experience presented.

#### **Plan of Instruction**

The doctoral program in epidemiology is designed to develop proficiency in epidemiologic investigation requisite for careers in service, research, or teaching in health agencies and institutions. It includes instruction in scheduled courses, with latitude in electives suitable to the student's background, interests, and needs. This is supplemented with participation in on-going field research designed to provide increasingly complex experiences commensurate with the student's development.

Length of training may be as long as 5 years, dependent upon the student's background. Candidates for the Ph.D. degree must plan to spend a minimum of 3 years of study and research. Such candidates must offer a minor in a field related to their background, interests, and special goals. The satisfactory completion of original research is a requisite for the Ph.D. degree. The acquisition of an M.P.H. degree during the course of study, or its presentation on admission, is highly desirable but not mandatory. For further details the student should consult the *Graduate School Bulletin*.

## ***Program in Health Education***

Major Advisers—Norman A. Craig, Edward V. Ellis

### **Requirements for Admission**

1. Bachelor's degree from an acceptable institution.
2. Graduate point average of B in undergraduate course work relevant to health education.
3. Satisfactory background in (a) basic health sciences, (b) educational theory and method, (c) social sciences.
4. Acceptable score on the Miller Analogies Test, graduate level, and other tests as determined by faculty. Upon receipt of application for admission, the Office of Admissions and Records will notify the applicant where to take the Miller test.
5. Personal interview by person designated by the program director.

### **Plan of Instruction**

The curriculum for health education specialists is designed to prepare persons who can assume leadership roles in planning and carrying out educational components of health programs.

The curriculum provides a basic public health content which will help the graduate to understand the broad field of public health and to work effectively with other health personnel. A core curriculum in health education provides for studies of educational principles, methods, and techniques, and the psychological and socio-cultural factors affecting changes in health behavior. Concurrent planned activities in community laboratory are related to the academic courses. The program of study consists of required courses supplemented by electives approved by the health education faculty as relevant to student needs and interests. Graduates are prepared to work in a variety of programs and services involving health education of individuals, families, groups, and the general public.

**One-Year Program**—For qualified applicants with at least 3 years of health-related work experience after completion of undergraduate studies. The

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program, which begins with the second term of the Summer Session and continues through the end of the second term of the following Summer Session, offers community laboratory experience coordinated with formal instruction until the end of the spring quarter. A full-time program of supervised community practice in an approved agency is provided in the final summer quarter.

**Two-Year Program**—Open to students who have just completed the Bachelor's degree or to other qualified candidates who lack the required health-related work experience. The course of studies comprises 5½ academic quarters of formal classwork and 2 quarters of supervised practice in an approved agency. The timing and sequence of academic work and community practice are governed by professional needs and interests of the individual student, with due regard for the limits set by required core courses. Students must begin with the second term of Summer Session.

Among the courses of special interest and value are the following:

### RECOMMENDED COURSES

(Credits shown in parentheses; \*\* indicates required courses)

- |  |  |
|--|--|
| PubH 95—Human Nutrition (3)  | EdCI 104—Adult Education (3)                                       |
| PubH 100A, B, C**—Elements of Public Health (6)                                | EdCI 105—Audio-Visual Materials in Education (3)                   |
| PubH 102A**—Environmental Health (2)   | EdCI 205—Problems in Audio-Visual Education (ar)                   |
| PubH 104**—Epidemiology I (3)  | EPsy 125—Group Dynamics in Education (3)                           |
| PubH 106**—Public Health Administration (3)                                    | EPsy 126—Analysis of Group Behavior (3)                            |
| PubH 107—Maternal and Child Health (3)   | Hlth 114—Administration of the School Health Education Program (3) |
| PubH 122—Public Health Administration Problems (3)                             | Jour 112—Communication and Public Opinion (3)                      |
| PubH 128—Comparative Community Health Education, Urban and Rural (3)           | Jour 114—Mass Communication Theory (3)                             |
| PubH 140**—Vital Statistics I (3)  | Jour 131—Public Opinion and Persuasion (3)                         |
| PubH 170**—Administration of Public Health Nursing (2)                         | AgJo 134—Rural Communication Media and Media Behavior (3)          |
| PubH 173—Culture and Public Health I (3)                                       | Jour 150—Institutional Public Relations (3)                        |
| PubH 181A, B, C, D, E**—Principles and Methods in Public Health Education (15) | Pol 117—Community Power Structures (3)                             |
| PubH 187A, B, C, D, E**—Community Health Education Laboratory (ar)             | Soc 106—Planning (3)   |
| PubH 190**—Community Health Education Practice (5)                             | Soc 111—Population Theory (3)                                      |
| PubH 193—Group Process in Community Health Education (2)                       | Soc 115—Social Aspects of Housing and Standards of Living (3)      |
| PubH 194—Health Education Preparation of Health and Allied Personnel (2)       | Soc 140—Social Organization (3)                                    |
| PubH 198—Health Education and Contemporary Health Care Systems (2)             | Soc 141—The Family (3)   |
| PubH 200—Research (ar)   | Soc 144—Social Stratification and Mobility (3)                     |
| PubH 210—Seminar: Public Health  | Soc 152—Sociology of Medicine and Medical Institutions (3)         |
| PubH 214—Health of the School Age Child (2)                                    | Soc 162—Rural Social Institutions (3)                              |
| Anth 100—Principles of Cultural Anthropology (3)                               | Spch 101—Argumentation and Persuasion (3)                          |
| Anth 150—Cultural Change and Development (3)                                   | Spch 106—Discussion (3)  |
| Anth 151—Applied Anthropology (3)  | Spch 169—Speech and Language in Human Behavior (3)                 |
|  | SW 271—Community Organization (3)                                  |
|  | SW 274—Seminar: Community Organization (ar)                        |

## ***Programs in Hospital Administration***

Major Advisers—Bright M. Dornblaser, James W. Stephan, Theodor J. Litman,  
Vernon E. Weckwerth, Janet G. Brodahl

### **MASTER'S DEGREE PROGRAM IN HOSPITAL ADMINISTRATION**

#### **Requirements for Admission**

1. Bachelor's degree as attested by certified transcript (submit two copies) of applicant's college record.
2. Course in elements and principles of accounting (6 quarter hours or equivalent). May be taken during Summer Session prior to start of academic year.
3. Letter indicating applicant's previous work experience and reasons for selecting hospital administration.
4. Names of three references (preferably connected with hospital, health, or medical field, and work experience).
5. An acceptable score on the Miller Analogies Test, graduate level. Upon receipt of application for admission, the Office of Admissions and Records will notify the applicant where to take the Miller test.
6. Personal interview by person designated by the program director.

Resources limit the number of students who can be accepted. Experience in hospital administration is valuable but not essential and does not in any way shorten the period of study. Preference will be given to full-time students as degree candidates. All correspondence regarding this program, including application for admission, should be directed to Director, Program in Hospital Administration, School of Public Health, University of Minnesota, Minneapolis, Minnesota 55455.

The objective of this program is to prepare men and women to achieve, after the requisite years of practical experience and responsible supervisory and managerial positions, the chief executive status of administrator or director of a hospital or other health care institution. The program covers a 21-24 month period of time. It normally consists of an academic year of 3 quarters and one to two summer sessions in full-time attendance at the University. It is followed by an administrative residency under a faculty-appointed clinical preceptor in an approved hospital or other health care institution. The student must prepare and submit a research thesis during the residency year. The curriculum draws upon other University facilities and upon facilities provided by hospitals and other health care institutions within the region adjacent to the University. The program of study provides a central group of subjects pertaining directly to the administration of hospital and health care institutions, with supplementary instruction in related fields including public health and medical care. Upon satisfactory completion of the program with a grade point average of not less than 2.50 (based on A = 4, B = 3, C = 2, D = 1), students are awarded the degree of master of hospital administration.



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The following program of courses will be followed:

(Credits shown in parentheses)

PubH 100A, B, C—Elements of Public Health (6)	PubH 161—History and Development of Hospitals (3)
PubH 106—Public Health Administration (3)	PubH 162, 163, 164—Principles of Organization and Management of Hospitals (15)
PubH 107A—Maternal and Child Health Program (1)	PubH 166—Hospital Clerkship (5)
PubH 108—Introduction to Biostatistics and Statistical Decision (3)	PubH 167—Management Problems in Hospital Administration (6)
PubH 109—Institutional Environmental Health (3)	PubH 168—Orientation to Medical Sciences (3)
PubH 125A—Health Education in Hospitals (1)	PubH 170A—Administration of Public Health Nursing (1)
PubH 141—Social and Economic Aspects of Medical Care (3)	PubH 210—Seminar: Public Health
PubH 160—Principles of Administration in Hospitals (6)	Spch 106A—Public Speaking, Conference Leadership (3)
	Soc 152—Sociology of Medicine and Medical Institutions (3)

## DOCTORAL PROGRAM IN HOSPITAL ADMINISTRATION

### Requirements for Admission

1. Bachelor's degree from an acceptable institution, preferably with breadth in the social sciences, mathematics, and administration.
2. Evidence of marked academic ability and potential for independent work and research.
3. Letter indicating applicant's reasons for seeking advanced education.
4. Names of three references attesting to scholarship, personality, and fitness for a teaching or research career.
5. Acceptable score on the Miller Analogies Test, graduate level.

### Plan of Instruction

The objective of this program is to produce scholars who plan to pursue teaching or research careers in hospital and health administration. The field of hospital administration is conceived to be more than the internal management of a hospital. Rather it is understood to encompass broadly all elements that affect the hospital and its related health services as social institutions. The curriculum emphasizes breadth of learning in contrast to technical development. The student will be given opportunity to (1) understand human society and the dynamic relationships between social behavior and health; (2) comprehend the economic, political, psychological, and social aspects of health services; (3) extend his knowledge of the planning, organization, and development of health services; (4) acquire knowledge of research and skill in its application to the hospital and other health services; and (5) obtain experience and guidance in teaching hospital administration.

## *Programs in Maternal and Child Health*

Programs of study allowing limited concentration in maternal and child health are available for suitably qualified physicians, dentists, nurses and other health administrators. These programs are highly individualized according to the student's professional background and, in general, provide a concentration of maternal and child health or related courses within the appropriate Master's program. Opportunities exist for specialized work experience within the University Medical Center and various community agencies. For listings of available electives see the section of this bulletin appropriate to professional background.

## *Programs for Physicians*

### **Requirements for Admission**

1. Degree of doctor of medicine from an acceptable institution.
2. One year's experience as an intern in an approved hospital or an acceptable substitute.

### **Plan of Instruction**

These programs are designed to train physicians who seek to become health officers or to occupy administrative posts in public health or health care programs.

The programs of study include a core of required public health courses supplemented by electives in public health or related fields, chosen in accordance with the student's special interest and needs. Programs leading to the degree of master of public health cover a minimum of 11 months. Students must begin their work with the second term of the Summer Session preceding the regular academic year and remain in residence during the interim period between the end of the second term of Summer Session and the beginning of fall quarter.

Among the courses of special interest and value are the following:

#### **RECOMMENDED COURSES**

(Credits shown in parentheses; \*\* indicates required courses)

- |   |   |
|---|---|
| PubH 100A, B, C**—Elements of Public Health (6)                             | PubH 133—Mental Health (3)  |
| PubH 104,** 105—Epidemiology I and II (6)                                   | PubH 134—Human Genetics and Public Health (3)   |
| PubH 106,** 122—Public Health Administration and Public Health Problems (6) | PubH 136—Handicapped Children (ar)  |
| PubH 107—Maternal and Child Health (3)                                      | PubH 137—Dental Health (1)  |
| PubH 114**—Environmental Health Programs (3)                                | PubH 140**—Vital Statistics I (3)   |
| PubH 120A—Biomedical Computing (3)  | PubH 140A—Vital Statistics II (3)   |
| PubH 125**—Introduction to Public Health Education (2)                      | PubH 141—Social and Economic Aspects of Medical Care (3)                              |
| PubH 129—Epidemiologic Survey Methods (3)                                   | PubH 143—Measurement and Application of Ionizing Radiation (3, lect and lab; 2, lect) |
|   | PubH 155—Introduction to Air Pollution Problems (3)                                   |

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- PubH 170\*—Administration of Public Health Nursing (2)  
PubH 188—Comparative Medicine and Public Health (2)  
PubH 191—Applied Human Nutrition (3)  
PubH 195—Public Health Aspects of Cardiovascular Disease (3)  
PubH 200—Research (ar)  
PubH 210—Seminar: Public Health  
PubH 214—Health of School Age Child (2)  
PubH 215—Maternal and Child Health Problems (3)  
PubH 241—Epidemiology of Noncommunicable Diseases (3)  
PubH 261-262—Alternative Patterns for Meeting Health Care Needs (3)  
PubH 269—Political Aspects of Health Services (3)  
Anth 165—Culture and Personality (3)  
PA 210—Foundations of Public Administration (3)  
PA 224—Social Welfare Administration (3)  
PA 247—Urban Development (3)  
PA 265—Intergovernmental Administration Relations (3)  
PA 280—Local Administration (3)  
Pol 130-131—Administrative Process (6)  
Soc 106—Planning (3)  
Soc 152—Sociology of Medicine and Medical Institutions (3)

**Concentration in Epidemiology**—For students interested in epidemiology there is a suitable group of public health electives (105, 129, 134, 188, 195, 213, 241). Through use of directed reading or research courses added emphasis can be given to areas of special student interest. Students wishing to gain advanced epidemiologic skills or desiring a Ph.D. program should read the description of the doctoral program on page 18. Traineeships are available to support research training in epidemiology.

**Concentration in Maternal and Child Health**—Physicians with a special interest in maternal and child health will find several directly related public health electives (107, 134, 136, 137, 214, 215). Individualized programs of study can be developed for suitably qualified advanced students through use of special reading courses and electives in related fields. Correlated clinical experience can be arranged within the University Medical Center or through community agencies.

Traineeships sponsored by the Children's Bureau are available. Also supported by the Children's Bureau is a joint pediatric-public health training program in community pediatrics.

## *Program in Physiological Hygiene*

Major Advisers—Ancel Keys, Henry L. Taylor

### Requirements for Admission

1. Bachelor's degree from an acceptable institution.
2. Evidence of satisfactory background in at least three of the following fields: biochemistry, physiology, psychology, physical education, physical anthropology, medicine, public health.
3. Acceptance of advisory responsibility by one of the graduate faculty members.

### Plan and Program of Study

In general, students wishing to emphasize work in physiological hygiene in a program leading to an advanced degree are advised to do so in connection

with a major in physiology, physiological hygiene, or epidemiology. The course of study leading to the Master's degree covers at least 3 academic quarters but in most cases should be planned to cover at least a full calendar year. A large part of 2 or more quarters will ordinarily be required for thesis work. The actual program will be adjusted to the individual needs of the student but will be arranged with emphasis on either physiology or biochemistry. In general, the following courses, or their equivalents, will be required for the Master's degree, in addition to courses that may be necessary to satisfy the core course requirements.

**RECOMMENDED COURSES**

(Credits shown in parentheses)

PubH 100A, B, C—Elements of Public Health (6)	PubH 191—Applied Human Nutrition (3)
PubH 110A-111A—Biometrics I and Biometrics Laboratory (5)	PubH 192—Physiology of Exercise (2)
PubH 152—Industrial Hygiene Engineering (3)	PubH 195—Public Health Aspects of Cardiovascular Disease (3)
PubH 154—Control of Radiation Hazards (3)	PubH 290—Research in Physiological Hygiene and Related Areas (6)
PubH 155—Introduction to Air Pollution Problems (3)	Phsl 106—Human Physiology (15) Physiological chemistry or agricultural biochemistry, graduate level courses (7)

Faculty of this program are advisers for programs leading to M.S. or Ph.D. degrees with a major in nutrition. Information about these programs is in the *Graduate School Bulletin*.

## ***Program for Public Health Nutritionists***

Major Advisers—Ruth Stief, Joseph Anderson

### **Requirements for Admission**

1. Bachelor's degree from an approved institution.
2. Appropriate courses in biochemistry, microbiology, nutrition, dietetics, education, psychology, behavioral sciences, foods, and food service management. Candidates who have not had undergraduate course work considered to be essential will be required to make up the deficiencies.

### **Plan of Instruction**

The course of study leading to the degree of master of public health or master of science covers a minimum of 1 calendar year beginning mid-July with the second term of the Summer Session. Students remain in residence during the interim between the end of Summer Session and the beginning of fall quarter to start the field course. This is completed in the first term of the Summer Session of the following year.

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The program of study includes certain required courses supplemented by electives chosen in accordance with the student's special interests and needs. The course credits are distributed approximately one-third in public health areas other than nutrition, one-third in nutrition, and one-third in related courses covering the areas of social welfare, community organization, the behavioral sciences, and education.

Students desiring the master of science degree should consult the public health listing in the *Graduate School Bulletin*. Students interested in program emphasis in specialized aspects of nutrition leading to the master of science or Ph.D. in nutrition should consult the *Graduate School Bulletin*.

Traineeships for suitably qualified students are available through grants from the Children's Bureau and the Public Health Service.

Among the courses of special interest and value are the following:

### RECOMMENDED COURSES

(Credits shown in parentheses; \*\* indicates required courses)

PubH 100A, B, C**—Elements of Public Health (6)	HE 172—Current Developments in Nutrition (3)
PubH 102A**—Environmental Health (2)	HE 174—Nutrition Topics (1)
PubH 104**—Epidemiology I (3)	Anth 150—Cultural Change and Development (3)
PubH 106**—Public Health Administration (3)	Anth 165—Culture and Personality (3)
PubH 122—Public Health Administration Problems (3)	Soc 141—The Family (3)
PubH 123—Topics in Public Health (ar)	Soc 145—Urban Sociology (3)
PubH 125**—Introduction to Public Health Education (2)	Soc 154—The Family in World Perspective (3)
PubH 140**—Vital Statistics I (3)	SW 100—Special Topic: Working With the Aged (3)
PubH 170**—Administration of Public Health Nursing (2)	SW 101—Special Topic: The Deprived Child (3)
PubH 189—Field Course in Public Health Nutrition (ar)	SW 105—Special Topic: The Multi-Problem Family (3)
PubH 191—Applied Human Nutrition (3)	SW 271—Community Organization (2)
PubH 196—Seminar: Public Health Nutrition (ar)	EdCI 104—Adult Education (3)
PubH 210—Seminar: Public Health	EPsy 193—Psychology of Human Learning (3)
HE 170-171—Human Nutrition (3 each)	

## Programs for Public Health Nurses

Major Advisers—Alma Sparrow, Eleanor M. Anderson, Delphie Fredlund, Rita A. Kroska, Katherine May, Dorothy Downey, Barbara Leonard, Elaine Sime

### Requirements for Admission

1. A baccalaureate degree from a program accredited by the National League for Nursing which prepares for professional nursing in all clinical areas, including psychiatric and public health nursing. Individual consideration will be given to applicants whose basic nursing preparation varies from the above. Deficiencies must be removed prior to admission to degree candidacy.
2. A grade point average of B in undergraduate course work.

3. Completion of the Miller Analogies Test, graduate level. Upon receipt of application for admission, the Office of Admissions and Records will notify the applicant where to take the Miller test.
4. Evidence of completion of an undergraduate course in mathematics or statistics. Students lacking this will be counseled on an individual basis concerning suitable substitution.
5. Evidence of personal and professional qualifications as supplied by two reference letters and, if possible, by an interview.
6. Nursing experience. Normally, applicants are expected to have had some public health experience, but well-qualified candidates who have just completed their baccalaureate education are given individual consideration.

### Plan of Instruction

Nurses who wish graduate preparation in public health nursing and who meet entrance requirements are admissible to programs of study leading to either the master of public health or master of science degree. In both M.P.H. and M.S. programs, the main clinical area is public health nursing (or nursing in the community outside hospitals). It is possible for an individual student's program to include extra emphasis in long-term patient care and rehabilitation including mental retardation, or in school nursing.

The goal of the program is to prepare administrators, supervisors, and teachers well grounded in the clinical practice of public health nursing. The program extends over a 6-quarter period beginning with the fall quarter, i.e., 2 academic years with the intervening summer free. Theoretical content is coordinated with clinical experience and nursing seminars. The program places emphasis on prevention of illness, promotion of health, rehabilitation of the chronically ill, and provides opportunity for work with patients in a psychiatric service and in mental health clinics. Advanced theory and practice in public health are shared with students in other disciplines in the School of Public Health. A student's plan of study does not need to be set until the beginning of the second year as the first year of study is the same for all students.

**Master of Science**—The master of science degree, with a major in public health nursing, is offered as a Plan B program in the Graduate School. It provides for concentration in public health and study in two related fields. Students who are recent graduates of the baccalaureate program or are planning to pursue an academic career of teaching or research in nursing should consider enrolling in the Graduate School as candidates for the M.S. degree. See the *Graduate School Bulletin*. Further details concerning related fields in line with various career plans will be supplied by the School of Public Health.

**Master of Public Health**—This is an advanced professional program in which students representing the various disciplines within the public health field pursue a common core of courses. Nurses planning to continue public health work in an administrative or consultative capacity should consider enrolling for the M.P.H. degree.

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Among the courses of special interest and value are the following:

### RECOMMENDED COURSES

(Credits shown in parentheses; \*\* indicates required courses;  
\*\*\* indicates additional course required in MPH program)

- PubH 100A, B, C\*\*—Elements of Public Health (6)  
PubH 102A\*\*\*—Environmental Health (2)  
PubH 104,\*\* 105—Epidemiology I and II (6)  
PubH 106,\*\* 122—Public Health Administration (6)  
PubH 107—Maternal and Child Health (3)  
PubH 125\*\*\*—Public Health Education (2)  
PubH 134—Human Genetics and Public Health (3)  
PubH 136—Handicapped Children (ar)  
PubH 137—Dental Health (1)  
PubH 140\*\*—Vital Statistics I (3)  
PubH 171\*\*—Research Methodology in Nursing (3)  
PubH 173\*\*—Culture and Public Health I (3)  
PubH 175A, B\*\*—Foundations of Public Health Nursing (ar)  
PubH 176\*\*—Clinical Seminar: Public Health—Mental Health Nursing (4)  
PubH 177\*\*—Group Process (2)  
PubH 179A, B—Long-Term Patient Care and Rehabilitation (ar)  
PubH 200\*\*—Research (ar)  
PubH 210—Seminar: Public Health  
PubH 214—Health of the School-Age Child (2)  
PubH 215—Maternal and Child Health Problems (3)  
PubH 221—Seminar: Long-Term Patient Care and Rehabilitation (ar)  
PubH 222—Seminar: School Nursing and Related Field Practice (ar)  
PubH 224—Seminar: Public Health Nursing Within the Curriculum (ar)  
PubH 225—Practicum in Teaching Public Health Nursing (ar)  
PubH 226A\*\*—Clinical Seminar: Public Health—Mental Health Nursing (ar)  
PubH 226B, C\*\*—Clinical Seminar: Concepts of Behavior in Illness (ar)  
PubH 241—Epidemiology of Noncommunicable Diseases (3)  
PubH 280—Orientation to Supervision and Administration in Public Health Nursing (3)  
PubH 281—Problems in Supervision and Administration in Public Health Nursing (3)  
PubH 282—Practicum in Supervision or Administration in Public Health Nursing (ar)  
PubH 283—Seminar: Consultation (2)  
PubH 285—Culture and Public Health II (3)  
CD 132—Adolescent Development (3)  
CD 140—Behavior Problems (3)  
EdCI 217—Seminar: School Health Education Program (ar)  
EdCI 250—Higher Education in the United States (3)  
EdCI 251—Curriculum Trends in American Colleges (3)  
EdCI 252—Effective College Training (3)  
EPsy 110—Educational Measurement in the Classroom (3)  
EPsy 125—Group Dynamics (3)  
EPsy 182—Education of Exceptional Children (3)  
Hlth 117B—Advanced Instruction in School Health for Secondary Schools (3)  
NuEd 175—Educational Administration in Nursing (3)  
Soc 120—Social Psychology (3)  
Soc 126—Family Development (4)  
Soc 140—Social Organization (3)  
Soc 141—The Family (3)  
Soc 152—Sociology of Medicine and Medical Institutions (3)  
Spch 169\*\*—Speech, Language in Human Behavior (3)  
SW 260—Administration in Social Work (2)

### Variations in Curricula Within Public Health Nursing

**Long-Term Patient Care and Rehabilitation**—This curriculum is designed to prepare selected nurses for positions as supervisors or consultants in community health agencies concerned with long-term patient care and rehabilitation. The curriculum includes, in addition to clinical experience in public health nursing, opportunities for the student to have guided experience in a variety of community settings and to share learning experiences with other members of a multidisciplinary rehabilitation team. Students may enroll in either the M.P.H. or M.S. program.

**School Nursing**—This curriculum is based upon advanced public health nursing clinical experience. Students work with selected school-age children and their families under faculty guidance over an extended period of time. In addition, they have opportunity to increase their understanding of the school nurse's role through guided experience in a school setting. Courses in education, in child growth and development, and in maternal and child health provide additional background. Students may enroll in either the M.P.H. or M.S. program, but preferably in the master of science sequence.

### **Functional Preparation**

**Supervision and/or Administration**—Nurses preparing for beginning positions in supervision pursue theory and practice courses with emphasis on the guidance aspects of the supervisory relationship. Those with experience in supervision have opportunity to secure additional preparation in administration through practice under faculty guidance. Students may enroll in either the M.S. or M.P.H. program.

**Teaching**—For students preparing to teach public health nursing in a collegiate school of nursing, the School of Public Health offers a special program of graduate study. This curriculum is designed to utilize the multidiscipline setting of a school of public health plus the educational advantages made possible through collaboration with a collegiate school of nursing. Students have opportunity to enroll in courses in higher education and, with faculty guidance, to apply principles from public health and education to the practice teaching of public health nursing. Students enroll in the Graduate School as candidates for the M.S. degree.

### **Traineeships**

Students who are seeking admission to either a master of public health or a master of science program are eligible to apply for federal training funds under Section 307, Public Health Service Act (Professional Nurse Traineeship Program). Application for traineeships should be made directly to the School of Public Health. No decision as to award is made until all admission materials have been processed and eligibility for admission to the program is determined. Selection will be based upon individual credentials, considering such factors as demonstrated or potential leadership ability, academic and experience backgrounds, and references. Students can be covered by traineeships throughout the 2 academic years of study but not during the intervening summer.

### ***Program for Public Health Veterinarians***

Major Advisers—Gaylord W. Anderson, Robert K. Anderson, Stanley L. Diesch

This program is offered in cooperation with the College of Veterinary Medicine located on the University's St. Paul Campus.



## School of Public Health

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### Requirements for Admission

1. Degree of doctor of veterinary medicine from an acceptable institution.
2. One year of experience in veterinary medicine is desirable.

### Plan of Instruction

This course of instruction, leading to a master of public health degree, ordinarily requires 11 months of study. Students should plan to be in attendance for the second summer term preceding the regular academic year, and to remain in attendance during the interim between the end of second term Summer Session and the beginning of fall quarter.

The program of study includes certain required public health courses, supplemented by electives chosen in accordance with the veterinarian's special interests and individual needs. Among the courses of special interest and value are the following:

#### RECOMMENDED COURSES

(Credits shown in parentheses; \*\* indicates required courses)

- |  |  |
|--|--|
| PubH 100A, B, C**—Elements of Public Health (6)                                      | PubH 241—Epidemiology of Noncommunicable Diseases (3)              |
| PubH 102**—Environmental Health (3) (114 may be substituted)                         | DInd 110—Sanitation Microbiology (3)                               |
| PubH 103—Public Health Bacteriology (3)  | DInd 113—Technical Control of Dairy Products (3)                   |
| PubH 104,** 105—Epidemiology I and II (6)  | DInd 151—Advanced Dairy Bacteriology (3)                           |
| PubH 106,** 122—Public Health Administration (6)                                     | Ent 118—Experimental Ecology (3)                                   |
| PubH 115—Food Sanitation (3)   | MicB 116**—Immunology (3)  |
| PubH 125**—Public Health Education (2)   | MicB 124—Virology and Animal Cell Culture (3)                      |
| PubH 143—Measurement and Application of Ionizing Radiation (2, 3 with lab)           | Pol 131—Public Administration (3)                                  |
| PubH 155—Introduction to Air Pollution Problems (3)                                  | VMic 128—Problems in Veterinary Bacteriology and Public Health (3) |
| PubH 170A**—Administration of Public Health Nursing (1)                              | VMic 205—Advanced Veterinary Bacteriology (3)                      |
| PubH 180**—Introduction to Biometrics (6) (110A and 111A, or 140 may be substituted) | VMic 221**—Advanced Veterinary Public Health (ar)                  |
| PubH 210—Seminar: Public Health  | VPaP 202—Seminar: Pathology (1)                                    |
| PubH 213—Seminar: Epidemiology (ar)  | VPaP 240—Advanced Veterinary Parasitology (3)                      |
| PubH 230—Field Practice in Environmental Health (ar)                                 | VSR 219—Fundamentals of Nuclear Medicine (3)                       |
|  | VSR 235—Radiation Biology (3)                                      |

## DESCRIPTION OF COURSES

**Course Numbering**—A course is designated by a prefix (departmental abbreviation) and number, and sometimes a letter. It will have the same number regardless of the quarter in which it is offered.

The course number, unless otherwise noted, indicates class standing requirements as follows: 1 to 49 for freshmen and sophomores; 50 to 99 for juniors and seniors; 100 to 199 for juniors, seniors, and graduate students; 200 and over, graduate students only.

A course sequence separated by hyphens (1-2-3) must be taken *in the order listed* unless there is a † mark indicating that a student may enter the sequence in any quarter.

**Room Schedules**—These will be posted at the School of Public Health office.

**Symbols**—The following symbols are used throughout the course descriptions and will carry no page footnotes:

† To receive credit, all courses listed after dagger must be completed.

§ No credit is given if credit has been received for equivalent course listed after section mark.

¶ Means "concurrent registration in" (i.e., must be taken simultaneously).

# A sharp sign means "consent of instructor."

**Abbreviations**—The following abbreviations are used throughout the course descriptions:

Ar	To be arranged or assigned	Lect	Lecture
Avg	Average	Prereq	Prerequisite
Cr	Credit(s)	Qtr	Quarter
Equip	Equivalent	Rec	Recitation
Lab	Laboratory		

A parenthetical statement after the description of each course gives the following information: the number of credits the course carries, and the courses or special class standing prerequisite to it. *Abbreviated statement*: (5 cr; prereq sr, 6). *Expanded statement*: This course carries 5 credits, is open to seniors or above only, and has as a prerequisite course 6 in the same department as the course being described.

### PUBLIC HEALTH (PubH)

3. **Personal Health.** Normal body function; causes and prevention of disease. (2 cr, §2, §50) Thomson
4. **Health Problems of the Community.** Prevention of disease in family and community. (2 cr; not open to students exempted from 2, 3, on basis of military service; prereq 3) Smith
5. **Individual and Public Health.** Basic concepts of cause and prevention of disease in family and community. (3 cr, §2, §3, §4, §50, §51) Thomson
50. **Personal and Community Health.** Fundamental principles of health conservation and disease prevention. (3 cr, §2, §3, §4, §5, §51, §52) Thomson

## *School of Public Health*

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51. **Community Hygiene.** Community programs for disease control. (3 cr, §4, §5, §50, §100A; not open to students exempted from 3 on basis of military service; prereq 3) Smith
53. **Introduction to Public Health.** Basic concepts of disease prevention and control through community programs. (5 cr; for nurses or nursing students only; prereq 3 or 50 or equiv and a course in bacteriology) Smith
65. **Field Practice in Public Health Nursing.** Instruction and supervised experience in public health nursing in selected public health agencies. (Cr ar; prereq ¶53) Staff
75. **Introduction to Environmental Health.** Principles of environmental health relating to water, food, wastes, housing, accidents, radiation, air, industrial hygiene. (3 cr; prereq 3 cr in public health) Michaelsen, Stauffer
- 75A. **Introduction to Environmental Health.** Principles of environmental health relating to water, food, wastes, housing, accidents, radiation, air, industrial hygiene. (3 cr; for pharmacy students; prereq 3 cr in public health) Bond, Smith
90. **Medical Statistics I.** Frequency proportions and probability; rates, measured variables; chance variation and judgment of significance; association. (3 cr; prereq medical students or #) Bearman, Thornton
91. **Physiological Hygiene.** Basic physiological principles and facts. (4 cr, †91-92; prereq 8 cr chemistry and 4 cr human anatomy or equiv) Taylor
92. **Physiological Hygiene.** Effects of exercise, nutrition, environment, and age on performance and health. (4 cr; prereq 91 or equiv) Taylor
95. **Human Nutrition.** Principles of nutrition, application to individual and family eating patterns, discussion of nutritional aspects of selected community problems or programs. (3 cr; prereq courses in chemistry and biology, or #) Stief
100. **Elements of Preventive Medicine and Public Health.** Occurrence and prevention of communicable, degenerative, and industrial diseases; health regulation of the environment; maternal and child health. (6 cr; prereq medical students only) G Anderson, Thomson, Schuman
- 100A. **Elements of Public Health I.** Occurrence and prevention of communicable, degenerative, and industrial diseases; protection of food, water, and milk; maternal and child health. (3 cr; prereq 3, or 50, and a course in microbiology and #) G Anderson, Thomson, Schuman
- 100B. **Elements of Public Health II.** Group work in evaluation and solution of representative community health problems. (2 cr; prereq 100A)
- 100C. **Elements of Public Health III.** Continuation of group work in evaluation and solution of representative community health problems. (1 cr; prereq 100B)
102. **Environmental Health.** Methods for promoting man's health and comfort by controlling the environment. (3 cr; prereq #) Bond and staff
- 102A. **Environmental Health.** General principles of urban and rural sanitation; problems encountered by official health agencies. (2 cr; prereq 100A or #) Bond, Stauffer
103. **Public Health Bacteriology.** Bacteriologic and serologic diagnosis; public health laboratory administration and methods. (Cr ar; prereq MicB 102, 116, #) Bauer
104. **Epidemiology I.** Basic epidemiologic principles applicable to infectious and noninfectious disease; host-agent-environment complex; factors underlying spread of infectious disease; laboratory applications of statistical and epidemio-

## *Description of Courses*

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- logic methods. (3 cr; prereq 100A, and 140, 180 or 110A-111A) Schuman, Gullen
- 105. Epidemiology II.** Extension of epidemiologic principles to detailed study of selected infectious diseases. (3 cr; prereq 104) Schuman, Gullen
- 106. Public Health Administration.** Structure, basic functions, and activities of public health agencies. (3 cr; prereq 100A) G Anderson
- 107. Maternal and Child Health.** Health needs and services for mothers and children in public health programs. (3 cr, §107A; prereq physicians, dentists, and nurses, or §, 100A) Bridge
- 107A. Maternal and Child Health Program.** Community programs for major maternal and child health problems. (1 cr, §107; prereq hospital administration students and §) Bridge
- 108. Introduction to Biostatistics and Statistical Decision.** Variation, frequency distribution; probability; significance tests; estimation; trends; data handling; simple operations research applications; statistical approach to rational administrative decision making. Lectures and laboratory exercises. (3 cr; prereq §) Weckwerth
- 109. Institutional Environmental Health.** Sanitation and safety practices in hospitals and other institutions. (3 cr; prereq hospital administration students or §, 100A) Michaelsen and staff
- 110A. Biometry I.** (Formerly 110) Basic concepts in probability; binomial, Poisson, and normal probability models; testing statistical hypotheses and estimation of parameters of probability models. (3 cr; prereq Math 10 or 43 or §, ¶PubH 111A) Bartsch
- 110B. Biometry II.** Further consideration of testing statistical hypotheses and interval estimation; regression analysis; correlation; use of ratios; analysis of variance; contrasts and multiple comparison techniques. (3 cr; prereq 110A and ¶111B) Bartsch
- 110C. Biometry III.** Analysis of randomized block, factorial and split plot designs;  $\chi^2$  applied to frequency data; multiple regression. (3 cr; prereq 110B and ¶111C) Bartsch
- 111A. Biometry Laboratory I.** Application of concepts of probability to the development of probability models for random phenomena in the biological and medical sciences. (2 cr; prereq ¶110A) Bartsch
- 111B. Biometry Laboratory II.** Application of concepts of testing and estimation concerning the parameters of the basic probability models; application of regression to bioassay; examples of the use and misuse of ratios; application of analysis of variance to bioassay. (2 cr; prereq ¶110B) Bartsch
- 111C. Biometry Laboratory III.** Basic designs will be illustrated with numerous examples from the biological sciences; application of  $\chi^2$  to goodness of fit and heterogeneity tests. (2 cr; prereq ¶110C) Bartsch
- 112. Environmental Aspects of Water Systems.** Sanitary aspects of design and operation of water treatment and distribution systems; examination of plans and field investigations. (3 cr; prereq 102, §) Bond and staff
- 113. Environmental Aspects of Liquid Waste Systems.** Sanitary aspects of design and operation of liquid waste treatment and collection systems; examination of plans and field investigations. (3 cr; prereq 102, §) Bond and staff
- 114. Environmental Health Programs.** Public health supervision of activities in urban and rural sanitation. (3 cr; prereq 100A, §) Bond and staff

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- 115. Food Sanitation.** Review of current literature on sanitary problems in production, processing, and distribution of milk, meat, shellfish, and other foods; methods of supervision. (3 cr; prereq 100A, #) Olson
- 115A. Institutional Food Protection Programs.** Public health implications in food preparation and service; regulatory controls by official public health agencies. (2 cr; prereq #) Bond, Jopke
- 116. Administration of Environmental Health Programs.** Administrative organization of environmental health activities. (3 cr, §114; prereq #) Bond
- 117A-B-C. Environmental Biology.** Plant and animal forms important in environmental health with special reference to disease vectors, eutrophication, and water supply problems. (3 cr per qtr; prereq 100A or ¶100A, #) Olson
- 118. Environmental Microbiology.** Survival, dissemination, transportation and significance of microorganisms in the environment; application of principles to environmental health problems. (3 cr; prereq 100A, 102, MicB 53 or #) Greene
- 120A-B-C. Biomedical Computing.** Introduction to digital computers and FORTRAN programming, with applications in biology and medicine; information capture, storage, retrieval and display; statistical analysis packages; simulation; analog signal processing; nonlinear models; hospital information systems. (3 cr per qtr; prereq Math 10) Briese, Pogue
- 120D-E.† Biomedical Computing.** Introduction to digital computer and FORTRAN programming, with applications in biology and medicine. (2 cr per qtr, §120A; prereq Math 10) Briese, Pogue
- 121A-B-C. Quantitative Mammalian Biology.** A: Diffusion, surface tension, and mechanics of respiration, circulation, digestion, and locomotion. B: Chemical aspects of blood, respiration, renal function, nutrition, and metabolism. C: Endocrine, sensory, neuromuscular, and central neural functioning. (3 cr per qtr; prereq 1-yr sequences in mathematics, physics, chemistry, and biology or #) Evans
- 122. Public Health Administration Problems.** Budgeting; program planning; appraisal of public health procedures. (3 cr; prereq 106) G Anderson
- 123. Topics in Public Health.** Selected readings in public health with discussion based on these readings. (Cr ar; prereq #) Staff
- 124. Medical Statistics II.** Survey of biostatistics for dentists and physicians; elementary statistical methods and their application with emphasis on dental and medical research and appreciation of the research literature; examples taken from recent dental and medical journals. (3 cr; prereq D.D.S. or M.D. or #) Bearman
- 124A. Research Methods in Clinical Studies.** Design, conduct, and analysis of clinical studies; prophylactic trials; therapeutic trials; validity and reliability of measurements and calibration studies for the clinical setting; sensitivity and specificity of tests and their application in clinical research and diagnosis; special problems of cooperative studies. (3 cr; prereq 124 or equiv or #) Bearman
- 125. Introduction to Public Health Education.** Planning educational components of community health programs; group procedures; community organization; methods and materials. (2 cr; prereq #) Craig, Ellis
- 125A. Health Education in Hospitals.** Guiding principles; purposes and scope; methods and materials; health education planning, with special emphasis on hospitals. (1 cr; prereq hospital administration students) Craig, Ellis

## *Description of Courses*

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126. **Occupational Health Programs.** Professional, social, economic, and legal aspects; organization; technical aspects of specific health hazards. (3 cr; prereq 100A or §100A and #)
127. **Advanced Studies in Health Education.** Case studies; planning and educational processes as applied within specific public health disciplines. (3 cr; prereq 125, 125A, or #) Craig, Ellis
128. **Comparative Community Health Education, Urban and Rural.** Factors affecting community organization in urban and rural settings; population characteristics, agencies, institutional patterns as determinants of health behavior; process of community organization for health. (3 cr; prereq #) Craig, Ellis
129. **Epidemiologic Survey Methods.** Practical aspects of survey design, analysis, and interpretation. (3 cr; prereq 104, 140 or equiv, #) Schuman, Gullen
132. **Mental Health Program.** Community program for promotion of mental health and care of mentally ill persons. (1 cr; prereq 106 or #) Williams
133. **Mental Health.** Emotional factors underlying wholesome family relations or interfering with successful adjustment in family and community. (3 cr; prereq #) Williams
134. **Human Genetics and Public Health.** Evaluation of current studies in human genetics and applications to community health. (3 cr; prereq 100A and #) Schacht
136. **Handicapped Children.** Prevention and rehabilitation of handicapping conditions affecting children; community activities related to emotional, physical, and intellectual handicaps. (Cr ar; prereq 107 and #) Bridge
137. **Dental Health.** Conditions resulting in tooth decay and loss; preventive and corrective measures; mouth hygiene; community programs for dental health. (1 cr; prereq #) Meskin
138. **Hospital Engineering Problems.** Application of environmental engineering, sanitation and maintenance principles to planning, administration, and operation of hospitals. (Cr ar; prereq #) Michaelsen, Nyquist, and visiting lecturers
140. **Vital Statistics I.** Official sources; population changes; rates; trends; significant differences. (3 cr) Bearman, Thornton
- 140A. **Vital Statistics II.** Demographic techniques and statistical inference for public health majors. (3 cr; prereq 140 with grade of B) Thornton
141. **Social and Economic Aspects of Medical Care.** Social and economic forces affecting administration and financing of medical care; sickness insurance, group hospitalization; concern of government in provision of medical care. (3 cr; prereq #) Litman and staff
142. **Medical Economics.** Economic problems of medical and hospital care for community; programs for medical care and health and hospital insurance. (1 cr; prereq sr medical students only)
143. **Measurement and Application of Ionizing Radiation.** (Same as Phcg 169). Introduction to principles of measurement and use of radiative sources. (3 cr lect and lab, 2 cr lect only; prereq #) Barber, Jonas
144. **History of Biostatistics.** Development of probability theory and systems for collection of vital statistics; early application to life tables, medical, and biological problems; biographies of men important in development. (3 cr; prereq 3 cr statistics) Thornton

## *School of Public Health*

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145. **Low-Level Radioactivity and Radiation Measurements.** Advanced isotope techniques designed for assay of low levels of radioactivity in environmental samples. (3 cr; prereq #) Barber
147. **Environmental Radioactivity.** Measurement, evaluation, and control of environmental radioactivity; hazards to general population. (3 cr; prereq #) Barber, Straub
149. **Public Health Aspects of Housing and the Residential Environment.** Principles of healthful housing; application in community planning and development. (3 cr; prereq #) Bond
- 150A. **Health Statistics I.** Statistics for health planning and administration; sources of data; summarization procedures used in vital statistics; methods of data collection; morbidity surveys. (3 cr, §140A; prereq biometry major, #) Kjelsberg
- 150B. **Health Statistics II.** Statistical topics in epidemiology; relative risk; misclassification; matched pairs designs; incidence as a function of several variables; selection; familial aggregation. (3 cr; prereq biometry major, #, 150A) Kjelsberg
- 150C. **Health Statistics III.** Statistics of survivorship; mathematical development of life table techniques and their application to follow-up studies in medicine and public health. (3 cr; prereq biometry major, #, 150B) Kjelsberg
151. **Health Aspects of Air Control in Hospitals.** Basic considerations in control of natural and mechanical air flow in hospitals to avoid spread of infection, to control odors, and to promote patient care. (2 cr; prereq #) Michaelsen
152. **Industrial Hygiene Engineering.** Field and laboratory methods used by industrial hygiene engineers in study and control of occupational health hazards. (3 cr; prereq #) Michaelsen
153. **Principles and Methods of Accident Prevention.** Accidents as a community public health problem; current concepts of etiology and methodology of control. (Cr ar; prereq #) Michaelsen, Scheffler
154. **Special Studies in Accident Prevention.** Directed readings and reports on selected problem areas in accident prevention and injury control. (Cr ar; prereq #) Michaelsen, Scheffler
155. **Introduction to the Air Pollution Problem.** History, sources, controls, effects, surveys, legal aspects; administration of programs. (3 cr; prereq #) Paulus
156. **Air Pollution Controls and Surveys.** Public health engineering approach to air pollution controls and surveys. (3 cr; prereq 155, #) Paulus
157. **Radiation Protection Criteria for Hospitals.** Methods of design, shielding, equipping, and operation of isotope laboratories, X-ray, and other ionizing radiation facilities. (2 cr; prereq #) Michaelsen, Wollan
158. **Hospital Safety.** Theories and practices in accident and fire prevention and control for hospitals and other medical care facilities. (3 cr; prereq #) Michaelsen, Scheffler
159. **Chemical Laboratory Safety.** Principles of accident and fire prevention in chemical laboratories. (1 cr; prereq #) Scheffler
160. **Principles of Administration in Hospitals.** Lectures, seminars, and field trips in hospital administrative principles; top management and board of trustees, policy formation, human relations. (6 cr) Dornblaser, Sweetland, and staff

## *Description of Courses*

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- 161. History and Development of Hospitals.** Functions; ownership and control; promoting and building new hospitals; integrated service; national associations and foundations. (3 cr) Brodahl, Stephan, and staff
- 162-163. Principles of Organization and Management of Hospitals.** Departmental structures and functions; organizational principles and practice. (3 cr [f]; 6 cr [w]) Dornblaser, Stephan, and staff
- 164. Principles of Organization and Management of Hospitals.** Personnel department; legal liability; fiscal management, hospital insurance, research in administration. (6 cr; prereq 162, 163) Brodahl, Stephan, Countryman, Litman, Weckwerth
- 166. Hospital Clerkship.** Assignment to local hospital for survey and solution of special problem. (5 cr) Bieter, Metzner
- 167. Management Problems in Hospital Administration.** Assignment and solution of specific managerial problems. (6 cr; prereq 162, 163, ¶164) Dornblaser, Sweetland
- 168. Orientation to Medical Sciences.** Medical terminology, applied anatomy, and physiology. (3 cr; prereq #) Thomson
- 169. Administrative Residency.** Field work of 1 calendar year's duration in approved hospital; weighted rotation through departments, solution of special problems, and preparation of an acceptable formal report. (Cr ar) Dornblaser, staff, and clinical preceptors
- 170. Administration of Public Health Nursing.** Interpretation of background and trends in public health nursing; analysis of staff and supervisory practice. (2 cr, §170A; prereq health officers, others #) Sparrow, Sime
- 170A. Administration of Public Health Nursing.** Scope; relationship to other aspects of public health. (1 cr, §170; prereq #) Sparrow, Sime
- 171. Research Methodology in Nursing.** Orientation to research design. (3 cr; prereq 140) Kroska
- 172A-172B. Directed Research.** Guided study in research design and completion of a project. (3 cr per qtr; prereq 171) Kroska and associates
- 173. Culture and Public Health I.** Intensive introduction to characteristics of culture and their implications for the health worker; adaptations to public health nursing. (3 cr; prereq #) Kroska
- 175A. Foundations of Public Health Nursing I.** Physical, psychosocial growth and development of early childhood; application of theory and knowledge in nursery school experience and nursing seminar. (4 cr; prereq #) E Anderson, Downey, Fredlund, May, Leonard
- 175B. Foundations of Public Health Nursing II.** Focus on school-age child through adolescence; experience in school settings, neighborhood centers. (4 cr; prereq 175A) E Anderson, Downey, Fredlund, May, Leonard
- 176. Clinical Seminar: Public Health-Mental Health Nursing.** Focus on family development and analysis of behavior and interactions; opportunity for increased competence through experience with families in a community agency. (4 cr; prereq 175A and 175B) E Anderson, Downey, Fredlund, May, Leonard
- 177. Group Dynamics.** Practical application of social psychological concepts to analysis of group behavior. (2 cr) Rosenberg



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- 179A. Long-Term Patient Care and Rehabilitation.** Problems associated with rehabilitation; selected experience correlated with seminars. (Cr ar; prereq #) E Anderson
- 179B. Long-Term Patient Care and Rehabilitation.** Independent study; exploration of a comprehensive multidiscipline approach in the continuity of care for long-term patients. (Cr ar; prereq 179A) E Anderson
- 179C. Field Work: Physical Therapy in Community Agencies.** Supervised experience in local public health agencies. Includes advisory service and planning in-service programs for nursing staff; selected experiences in county and state health departments. (Cr ar; prereq #) E Anderson
- 180. Introduction to Biometry.** Variation; frequency distribution; probability; estimation; significance tests; binomial, normal, Poisson distributions; serial dilutions; most probable number. (6 cr; prereq environmental health students only, others #) Kjelsberg
- 181A. Foundations in Public Health Education Practice.** Role and function of health education specialist; relationship to other public health disciplines; overview of public health and related fields; introduction to health education principles and methods. (3 cr; prereq #) Craig, Ellis
- 181B. Principles and Methods of Health Education Planning.** Nature and role of planning process in health education; elements of comprehensive educational planning. (3 cr; prereq 181A) Craig, Ellis
- 181C. Communication Process in Health Education.** Communication theory and process; application of communication models in planned community health education efforts; case studies in communication. (3 cr; prereq 181A-181B) Craig, Ellis
- 181D. Principles and Methods in Public Health Education—Practicum in Program Evaluation.** Determining, selecting, and applying criteria for evaluating health education methods; measurement of progress; evaluation of public health programs. (3 cr; prereq 181C) Craig, Ellis
- 181E. Principles and Methods in Public Health Education—Organization and Administration in Health Education.** Methods and procedures in organizing and administering health education programs and services; consultation process in health education. (3 cr; prereq 181D) Craig, Ellis
- 182. Philosophy and Concepts of Preventive Dentistry.** Basic principles of preventive dentistry; relationship between oral and general disease processes; epidemiology of oral diseases; preventive procedures; organizing and evaluating community dental health programs. (3 cr; prereq #) Meskin
- 183. Seminar: Dental Health Literature.** Current review of literature pertinent to dental public health, critical examination for design, content, and validity of conclusions. (Cr ar; prereq #) Meskin and staff
- 184. Dental Health Programs.** Dental health activities and problems in a community situation; observation visits and participation in public and voluntary facilities; preventive, curative, rehabilitative, and research activities of local, state, and federal agencies; problems of dental manpower. (Cr ar; prereq #) Meskin
- 185. Air Analysis.** Laboratory and field exercises including air flow measurement, calibration of instruments, analysis of gases, stack sampling, dust counting and sizing, and industrial plant visits. (3 cr; prereq 152 or 155, #) Paulus

## *Description of Courses*

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- 186. Problems of Air Pollution Control.** Special supervised studies involving laboratory and field investigation procedures; pertinent literature review. (Cr ar; prereq 155, #) Paulus
- 187A-B-C-D-E. Community Health Education Laboratory.** Practical experience in community agencies and organizations; background studies in specific neighborhood areas; supervised health education practice; action planning for health education. (Cr ar; prereq ¶181A, B, C, D, or E) Craig, Ellis
- 188. Comparative Medicine and Public Health.** Survey of comparative medicine in man's relationship to biologic environment, interrelationship between animal and human health, source of animal diseases, ecology of zoonoses, food production and hygiene, laboratory animal medicine. (2 cr; prereq 100A and #) Diesch
- 189. Field Course in Public Health Nutrition.** Placement in an approved agency with opportunity for experience in nutrition aspects of public health programs. (Cr ar; prereq #) Stief and associates
- 190. Community Health Education Practice.** Approximately 10 weeks of supervised community health education experience (first and second terms of Summer Session only). (5 cr each term; prereq 181 and 187 seq and #) Craig, Ellis
- 191. Applied Human Nutrition.** Food composition and standards of nutrient requirements; methods in dietary and nutritional status surveys; applications of nutrition to public health programs related to specific diseases and population groups. (3 cr; prereq #) J Anderson, Grande, Stief
- 192. Physiology of Exercise.** Muscular efficiency, training, deconditioning, effects of exercise on metabolism and physiological systems. (Cr ar; prereq Phsl 106, 107 or equiv and #) Taylor
- 193. Group Process in Community Health Education.** Group methodology in problem solving; principles, concepts, and process of group dynamics as a method to community health education. (2 cr; prereq 181A or 125 and #) Craig, Ellis
- 194. Health Education Preparation of Health and Allied Personnel.** Methods, procedures, and techniques for planning, implementing, and evaluating programs for in-service and short-course preparation in health education for health and allied personnel. (2 cr; prereq ¶181D and #) Craig, Ellis
- 195. Public Health Aspects of Cardiovascular Disease.** Etiology, incidence; problems of control and relationship to mode of life. (3 cr; prereq #) Keys, Grande
- 196. Seminar: Public Health Nutrition.** (Cr ar; prereq #) Stief
- 197A-B-C. Elements of Mathematical Biology.** Physico-, chemo-, mathematical biology; statics and dynamics of tissues and fluids; biological reaction and compartment analysis, ion diffusions, and colloids; analog and digital computer uses in biomedicine. (3 cr per qtr; prereq mathematics through differential equations and 1-year sequences in physics, chemistry, and a basic biological science, with lab work in one or more, or #) Ackerman, Evans
- 198. Health Education and Contemporary Health Care Systems.** Role of health education specialist in traditional and developing health services; factors affecting health education practice in special settings such as hospitals, schools, and industry and in subject matter areas such as mental health, dental health, injury control. (2 cr; prereq ¶181D and #) Craig, Ellis
- 200. Research.** Opportunities will be offered by the School of Public Health and by various cooperating organizations for qualified students to pursue research work. (Cr ar) Staff

## *School of Public Health*

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- 201. Topics in Biometry.** Studies in special topics for advanced students. (Cr ar; prereq 110A and #) Staff
- 202. Seminar: Physiological Hygiene.** Nutrition, tests and measurements of human physical fitness; gerontology; adaptation in health and disease; body composition; circulatory dynamics and related topics. (1 cr) Staff
- 203A-203B-203C. Research Design in Biometry.** Methodology of design of experiments and sample surveys in behavioral and biological sciences; randomized blocks, Latin-squares, factorials, incomplete blocks, long-term experiments and analysis of groups of experiments; simple random, stratified, multistage, and multiphase sampling designs. (3 cr per qtr; prereq 110C or #) McHugh
- 204A-204B-204C. Theory of Research Design in Biometry.** Theory of linear estimation and general linear hypothesis; analysis of multiple classifications; components of variance; randomization theory of designs. (2 cr per qtr; prereq calculus and ¶203A-B-C) McHugh
- 210. Seminar: Public Health.** Staff
- 211. Seminar: Biometry.** (Cr ar) Staff
- 212. Seminar: Environmental Health.** (Cr ar; prereq #) Olson
- 213. Seminar: Epidemiology.** Discussion of selected current epidemiologic problems. (Cr ar; prereq #) Schuman, Gulien
- 214. Health of the School Age Child.** Review of major health problems among children of school age; methods of providing and evaluating school health services. (2 cr; prereq 107 or #) Bridge, Branthaver
- 215. Maternal and Child Health Problems.** Problems in administration of health programs for infants, preschool and school age children, handicapped children, and women of child-bearing age. (3 cr; prereq 107 or #) Bridge and staff
- 216A-216B. Biomedical Measurement Problems.** Statistical aspects of biological assays and counting techniques, calibration problems, quality control procedures. (3 cr per qtr; prereq 110C) Staff
- 217A-217B. Theory for Biomedical Measurement Problems.** (2 cr per qtr; prereq Stat 123 or 133 or #, and ¶PubH 216A-B) Staff
- 220. Readings in Problems of Physiological Hygiene.** (Cr ar; prereq #) Keys and staff
- 221. Seminar: Long-Term Patient Care and Rehabilitation.** Development of an exploration project relative to multidisciplinary action; affecting patient care, review of current research findings. (Cr ar; prereq 179 or #) E Anderson and associates
- 222. Seminar: School Nursing and Related Field Practice.** Exploration of nursing in the school setting; role relationships; review of current research. (Cr ar; prereq #) Fredlund
- 224. Seminar: Public Health Nursing Within the Curriculum.** Course objectives: organization; opportunity to explore problems in the development of plans for teaching public health nursing. (Cr ar; prereq #) Kroska, Leonard
- 225. Practicum in Teaching Public Health Nursing.** Planning for and evaluation of instruction; selected field experiences and seminars. (Cr ar; prereq #) Kroska, Leonard
- 226A. Clinical Seminar: Public Health-Mental Health Nursing.** Opportunity for increasing competence in use of behavioral and mental health concepts and use of nurse-patient relationship. Seminar analysis concurrent with public health

## *Description of Courses*

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- nursing experience. (Cr ar; prereq 175A and 175B, 176) Sparrow and associates
- 226B-226C. Clinical Seminar: Concepts of Behavior in Illness.** Etiology of physical and mental illness, and current treatment. Opportunity for experience with patients in hospital and community agencies. (Cr ar; prereq 226A) Sparrow and associates
- 230. Field Practice in Environmental Health.** (Cr ar; prereq #) Bond
- 231. Ground Water Development.** Ground water exploration through well design and construction; special reference to public health problems. (Cr ar; prereq grad engr, #) Bond, Singer, staff, and visiting lecturers
- 232. Field Work in Ground Water Development.** Construction of wells, field tests, and public health problems. (Cr ar; prereq grad engr, 231) Bond, Singer, staff, and visiting lecturers
- 233. Water Quality Investigation and Research Techniques.** Field techniques and special research methods for establishing pollution base-lines; recognition and appraisal of advancing eutrophication. (6 cr; prereq #) Olson, Odlag
- 234. Water Quality Research.** Design and implementation of independent short-term research activity. Literature review, statistical design, and data processing. (6 cr; prereq #) Olson, Odlag
- 238. Radiation Dosimetry.** Radiant energy absorption in liquids, gases, and solids; absorption in biological systems. (3 cr; prereq MeAg 127, Phys 110, PubH 147 or #) Barber
- 238A. Radiation Dosimetry Laboratory.** Laboratory exercises involving principles discussed in 238. (1 cr; prereq ¶238) Barber
- 241. Epidemiology of Noncommunicable Diseases.** Application of basic epidemiologic principles to noncommunicable diseases and to trauma; selected disease examples. (3 cr; prereq 104) Schuman, Gullen
- 250A-250B-250C. Foundation of Biometry.** Measurement models, theories of probability, logic of induction, alternative theories of inference. (2 cr per qtr; prereq 204C, 217B or #)
- 261-262. Alternative Patterns for Meeting Health Care Needs.** Future role of hospitals and related health services in light of patient needs and community services. (3 cr per qtr; prereq #) Litman and staff
- 264. Seminar: Medical Care Patterns Abroad.** (3 cr; prereq #) Litman
- 265. Seminar: Research Studies on Health Services.** (3 cr; prereq #) Litman, Weckwerth and staff
- 266. Hospital Administration Topics.** Independent study under tutorial guidance on selected problems, current issues. (Cr ar; prereq #) Dornblaser, Stephan, Weckwerth
- 267. Health and Human Behavior.** Social ecology of health; social and personal components of illness; health and the community; social and cultural aspects of health care services. (3 cr; prereq #; not offered 1968-69)
- 269. Political Aspects of Health Services.** Analysis of interrelationships between government, politics, and health services; political and social bases of health legislation and community decision making in provision and modifications of health services. (3 cr; prereq #; offered 1968-69 and alt yrs) Litman

## ***School of Public Health***

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- 273. Contemporary Problems of Hospital and Related Health Services.** Current concepts, problems, principles, and future developments in hospital and related health services. (Cr ar; prereq #) Dornblaser, Stephan, and staff
- 274. Readings in Theory and Principles of Hospital Administration.** (Cr ar; prereq #) Dornblaser, Stephan, and staff
- 280. Orientation to Supervision and Administration in Public Health Nursing.** Application of principles; relationship of structure and philosophy of agency to supervisory role. (3 cr; prereq #) E Anderson, Sime
- 281. Problems in Supervision and Administration in Public Health Nursing.** Analysis of selected aspects of administrative and supervisory process. (3 cr; prereq 280) E Anderson, Sime
- 282. Practicum in Supervision or Administration in Public Health Nursing.** Experience in selected aspects of supervision or administration in local agencies under faculty guidance. (Cr ar; prereq 280, 281) E Anderson, Sime
- 283. Seminar: Consultation.** Opportunity for selected public health students to deepen understanding of the process involved in consultation. (2 cr; prereq #) Sparrow and associates
- 285. Culture and Public Health II.** Culture patterns and culture change. The dynamics of change and their implications for the health worker in developing and advanced societies. (3 cr; prereq #) Kroska
- 290. Research in Physiological Hygiene and Related Areas.** (Cr ar) Staff

1967-70



## How to Use This Bulletin

This bulletin gives information about the Department of Mortuary Science. *The student is held responsible for the information contained in this bulletin.* You should become familiar with all the materials presented in it and keep the bulletin available for easy reference.

While this bulletin gives information necessary for program planning, it will be necessary to consult the *Class Schedule* published just prior to each quarter to ascertain room numbers, hours, and days of class sessions, and any last-minute changes in offerings. For any changes in regulations that become effective after publication of this bulletin, consult the department office.

Do not attempt to register from the *Class Schedule* alone. The *Mortuary Science Bulletin* is essential for securing course descriptions and prerequisites, rules and requirements, and other information necessary for sound program planning. Since the fall quarter *Class Schedule* gives the hours and days of courses throughout the year, it should be retained for long-range program planning.

You should also read the *General Information Bulletin* telling about the University as a whole. New students will be interested in *The Moccasin*, a handbook describing student personnel services and campus activities.

Copies of all bulletins of the University can be obtained at the Information Window in Morrill Hall.

**The Department of Mortuary Science office is  
located in room 114 Vincent Hall**

### UNIVERSITY OF MINNESOTA BULLETIN

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The contents of this bulletin and of other University bulletins, publications or announcements are subject to change.

# UNIVERSITY OF MINNESOTA

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## DEPARTMENT OF MORTUARY SCIENCE

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Robert C. Slater, B.S., Director of Mortuary Science

### Faculty

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Gertrude O. Koschig, Licensed Mortician, Instructor in Restorative Art and Funeral Service Orientation  
Eugene M. Larson, B.S., Instructor and Coordinator in Public Health Laws and Regulations  
John Oman, S.T.M., D.D., Special Lecturer  
Robert C. Slater, B.S., Professor of Embalming and Mortuary Management  
Dale E. Stroud, A.M.S., B.S., Assistant Professor of Embalming

*All other appointments are made from full-time staff members of the cooperating colleges and departments*



## INTRODUCTION

The profession of funeral service is unique in its demands upon those who choose it for a life's vocation. After personal qualifications have been evaluated and found satisfactory, the choosing of a college to fulfill the academic requirements becomes of prime importance. The University of Minnesota since 1908 has maintained as a part of its curriculum offerings a program in mortuary science. Throughout its more than half century of service to the nation it has graduated students from each of the 50 states and several foreign countries.

The program of the department has always maintained a curriculum whose academic integrity is consistent with that of a large state-supported institution of higher learning. Its faculty has been selected from professionally qualified people, well educated in their respective fields of teaching. The profession within the state of Minnesota and the Minnesota State Board of Health each contribute to the status of the department through their cooperation and assistance.

The University demands an acceptable level of scholarship and professional sensitivity of each of its graduates and therefore offers the ultimate in academic training and professional growth in order to develop individual potential to its fullest.

The department accepts fully the obligation entrusted to it by funeral service to strive for the continual advancement of the profession through higher education and the careful selection and preparation of those who seek entrance into the profession. The department also accepts the obligation assigned to it by each matriculated student to offer him the finest in scholastic preparation to enter his chosen profession. The department believes that funeral service is a profession which finds its greatest fulfillment in serving the living, while caring for the dead and giving dignity to man.

Based on these purposes and obligations the Department of Mortuary Science presents this bulletin which, together with the *General Information Bulletin* will furnish the prospective student insight and information regarding the curricular offerings and the facilities of the Department of Mortuary Science.

# Department of Mortuary Science

## GENERAL INFORMATION

The Department of Mortuary Science is located in Vincent Hall on the Minneapolis Campus of the University of Minnesota. Its students enjoy all the advantages which come from participation in the activities of a university composed of academic, scientific, and professional schools and colleges.

The program, established in 1908, was the first such program to be organized as a part of a state university. As of July 1, 1968, the department becomes an integral part of the College of Medical Sciences for its administrative supervision.

The first session in 1908 was of 6 weeks' duration. In 1916 the curriculum was extended to 8 weeks and in succeeding years made increases to 12 weeks, 24 weeks, and 36 weeks. In 1951 the Board of Regents authorized a 2-year curriculum and the granting of an associate in mortuary science degree. This curriculum was expanded to a 3-year program in 1955. On March 8, 1968, the Board of Regents approved the awarding of a bachelor of science degree upon the satisfactory completion of a 4-year (12-quarter) specified curriculum.

The curriculum in mortuary science combines the instruction in the basic sciences, training in the mortuary arts and sciences, instruction in the liberal arts and cultural subjects deemed necessary and desirable for proficiency in funeral service. The curriculum is fully accredited by the American Board of Funeral Service Education and the Conference of Funeral Service Examining Boards of the United States, Inc., and is accepted by those states requiring such accreditation.

The primary objective of the department is to offer such academic training to the student which will best prepare him to accept his obligation in the community, both as a professional person and as a citizen. It is the desire of the department and its faculty to train for the profession persons whose ethical conduct and practices, professional relationship with the bereaved, desire for research and professional growth, and respect for the public health laws and regulations will be such as to foster and promote the fuller acceptance and recognition of funeral service and its contribution to the American way of life.

## Curriculum

The curriculum in mortuary science is specifically planned to assist those who desire college preparation in addition to professional educational requirements. Many states now require such a combination plus resident training or internship for licensure.

Consistent with the high standards established by the Board of Regents, the department's highly qualified teaching staff, together with modern classroom and laboratories of this leading University, enables the student to study mortuary science under the most favorable conditions.

Instruction is given by lectures, laboratory courses, demonstrations, and clinical practice. Throughout the entire program the teaching is integrated closely with the basic science laboratories and the clinical facilities offered in Minneapolis and St. Paul.

## Department of Mortuary Science

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A student to be eligible for admission to the junior year of the curriculum must have completed certain courses or their equivalent as outlined elsewhere in this section as specified in the freshman and sophomore years by registering in the *College of Liberal Arts* or the *General College* of the University or at an accredited liberal arts college of his choice.

Satisfactory completion of the curriculum for the junior and senior year will lead to the awarding of the bachelor of science degree with a major in mortuary science.

A student may elect not to complete all of the requirements for the Bachelor's degree but may choose to complete only those professional courses required by the state in which he intends to license. In such instances the department will certify his attendance and course completion with the issuance of an official transcript provided he has complied with all other department requirements and the minimum requirement of the American Board of Funeral Service Education.

The professional portion of the curriculum is scheduled into the junior and senior year and a student would ordinarily plan his program as follows:

### JUNIOR YEAR

<i>Fall</i>		<i>Winter</i>		<i>Spring</i>	
History and Orientation	2	Pathology	3	Anatomy	3
Psychology of Funeral Service	2	Embalsming Chemistry	4	Pathology	3
Embalsming	5	Funeral Management	5	Funeral Management	3
Electives	6	Electives	3	Embalsming	3
	—		—	Electives	3
	15		15		—
					15

### SENIOR YEAR

Mortuary Law	5	Practicum**	12	Seminar	5
Public Health	2	Practicum Conference	3	Independent Study	ar
Restorative Art	4		—	Electives	10
Electives	4		15		—
	—				15
	15				

## Admission Requirements

### General

At the undergraduate level, the Department of Mortuary Science serves primarily as an Upper Division unit, that is, students will normally enter the Department of Mortuary Science at the beginning of their junior year. Freshman and sophomore students with an interest in a mortuary science major are urged to contact the department offices at 114 Vincent Hall at once in order to receive appropriate advice. Course work in mortuary science will be based on a sound preparation in the liberal arts. Students may register in the College of Liberal Arts or the General College during their freshman and sophomore years, with the advice and counsel of a member of the department faculty, for the courses that will provide the most adequate preparation for their Upper Division registration in the Department of Mortuary Science. Students should refer to the *College of Liberal Arts Bulletin* and the *General College Bulletin* for information regarding admission criteria, etc.

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\*\* Practicum will be offered fall quarter for those students who have completed the prerequisite courses.

## General Information

As stated in the University Senate *Minutes* of June 1965: "The University of Minnesota believes that all of its students, whatever their area of specialization or their vocational goals, should hold in common the search for a liberal education. In the broadest sense a liberal education is one which frees us from the limitations placed by ignorance on our powers of judgment and choice. More specifically, a liberal education asks of us that we seek control over the general intellectual instruments for acquiring and communicating knowledge, primarily the instruments of language and number; that we seek understanding of the ways in which scientists contribute to man's knowledge of himself and his environment; that we seek historical and philosophic perspective on the nature of our own lives and the world in which we live; and that we seek appreciation of the creative insights into life and nature provided by literature and the arts." To help students achieve the goals of liberal education, the College of Medical Sciences and the Department of Mortuary Science expect each student to distribute some part of his course work in areas of study other than those most closely linked to his specialized or vocational interests.

The minimum 90 quarter-credit requirement for admission to the Department of Mortuary Science must include the following courses or equivalents:

### 1. Communications, Language, Symbolic Systems—18 credits

#### A. Freshman Composition

Engl 1-2-3 (9)

#### B. Speech

Spch 5 (5)

#### C. Electives

Foreign language, philosophy, mathematics, statistics, journalism

### 2. Physical and Biological Sciences—27 credits

#### A. General Biology

Biol 1-2 (10)

#### B. Inorganic Chemistry

GeCh 4 (5) or GC 7C (5)

#### C. Human Anatomy

Anat 4 (4)

#### D. Microbiology

MicB 1 (4)

#### E. Public Health

PubH 3-4 (4)

#### F. Electives

Physics, physiology, astronomy, geology

### 3. Man and Society—20-21 credits

#### A. Psychology

Psy 1-2 (6)

#### B. Accounting

Acct 24-25 (6) or GC 16 (5)

#### C. Sociology, social science or anthropology (9)

#### D. Electives

History, political science, economics, geography

### 4. Artistic Expression—9 credits

#### A. Electives

Art, music, humanities, theatre arts, literature

## Department of Mortuary Science

A typical program for the freshman and sophomore years is as follows:

### FRESHMAN

Fall		Winter		Spring	
Engl 1	3	Engl 2	3	Engl 3	3
PubH 3	2	Biol 1	5	Biol 2	5
SSci 1*	3	Soc 1*	3	PubH 4	2
Electives	7	Electives	4	Spch 5	5
	15		15		15

### SOPHOMORE

Anat 4	4	MicB 1	4	Psy 2	3
Inorganic Chemistry	5	Psy 1	3	Anth 2A*	5
Electives	6	Accounting	5	Electives	7
	15	Electives	3		15
			15		

### Admission Procedure

**Requirements for Admission**—Students will normally enter the Department of Mortuary Science at the beginning of their junior year. Students having a total of 90 quarter credits, including the required and elective courses as outlined, may make application for entrance into the Department of Mortuary Science, College of Medical Sciences. (*Special note:* Certain deficiencies, at the discretion of the Admissions Committee, may be made up after admission to the department if such a procedure is advantageous to the program scheduling of the individual student.)

**Transfers from Other Colleges Within the University**—Obtain a "Transfer of College Within the University" form from the Office of Admissions and Records. Transfer application deadlines of September 1, December 1, March 1, and June 1 have been set for the fall, winter, spring quarters, and Summer Session respectively.

**Admission from Outside the University with Advanced Standing**—Apply to the Minneapolis Campus, Office of Admissions and Records. Official transcripts from each college outside the University must be a part of the application submitted.

Students planning to enter fall quarter should make application at the earliest possible date. Ordinarily applications can be acted on before the transcript with the *current* quarter's grades has been submitted. The student will be admitted, subject to the satisfactory completion of his current registration.

A student may find it to his advantage to enter in the first and/or second term of Summer Session preceding the fall quarter of his junior year. Flexibility of the curriculum and the completion of certain other requirements before admission to the department may enable some students to satisfy the graduation requirements in less than 6 academic quarters.

Selection of students, to be made by an Admissions Committee composed of department staff, will be based on scholastic standing (at least a C average) and upon character and personal fitness as disclosed by the application and/or personal interview. Those accepted will matriculate in the Department of Mortuary Science, College of Medical Sciences.

Following favorable action by the committee on admissions, an admission certificate will be mailed to each student accepted for matriculation. Students

\* Suggested as one method of fulfilling requirements in Group 3, Man and Society.

## General Information

entering from other colleges or universities will also receive a statement of advanced standing. Instructions for registration will either be enclosed with the admission certificate or be mailed later—about 1 month before the opening of the next quarter. Students must present this admission certificate when reporting for registration.

Students attending colleges other than the University of Minnesota during their freshman and sophomore years should communicate with the director of mortuary science for assistance in program planning.

Each student must pass a physical examination at the time of first admission to the University and also as a part of the graduation requirement. Any student who is not physically or emotionally able to perform the services of a funeral director will not be accepted.

Further information relating to requirements and training may be obtained from the Mortuary Science Office, 114 Vincent Hall, University of Minnesota, Minneapolis, Minnesota 55455. Telephone appointments may be made by calling 373-3870 (Area Code 612).

### Graduation Requirements

Students recommended for the bachelor of science degree with a major in mortuary science must satisfy the following requirements:

1. Minimum credits—180
2. Completion of the freshman and sophomore Liberal Education requirements in the categories of Communications, Language, and Symbolic Systems; Physical and Biological Sciences; Man and Society; and Artistic Expression for a total of 90 quarter credits. Refer to the specific requirements in each area as listed in the Admission Section.
3. Completion of the basic core curriculum in mortuary science.
4. Completion of a minimum of 15 quarter credits in Upper Division courses other than department courses.
5. A grade point average of at least 2.00 (C average) computed in each of the following ways: (a) in all work presented from the University and *in toto*, (b) in all work done while in the Department of Mortuary Science, and (c) in all courses in mortuary science.

### Department Regulations

In this section will be found the answers to the most common questions of students. It is imperative that the following paragraphs be read carefully. Students who know the details of department procedure, the rules and regulations of the department, registration procedure, the degree requirements, and other information can more easily plan their own education; it will save trouble in the future; and it will be possible to get problems settled more quickly and satisfactorily. The director and his staff are available for conference at the convenience of the student.

**Registration**—Along with the admission certificate mailed to qualified applicants, you will be notified of either a special registration appointment or the specified days set aside for registration. When you report for registration you will be given a set of detailed instructions and a suggested program plan for the completion of all degree requirements. These will make the process of registration relatively simple. Your registration will be completed with the help of the director of the department and his staff.

**Counseling**—Because of the specialized nature of the work in funeral service, all applicants are urged to consult with the director or his staff before

## Department of Mortuary Science

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registration. Advisers for mortuary science are available for consultation, in person or by letter, with prospective students. Their offices are located in 114 Vincent Hall. A pamphlet, *Funeral Service—A Heritage, A Challenge, A Future*, is available upon request.

**Faculty Advisers**—As you go through college you may need help with such matters as getting registered, selecting courses, choosing your vocation, arranging finances, entering student activities, or solving other personal problems. Much of this assistance is provided by the department, though for some problems you may wish to take advantage also of the all-University personnel services. At the time of your first registration, you will be assigned the services of a faculty adviser.

Freshman and sophomore students in the College of Liberal Arts at the University of Minnesota will be assigned an adviser from the Department of Mortuary Science who will assist them with course selection, registration, and academic advisement. Registration must be approved by a mortuary science adviser each quarter.

**Change of Registration**—If you have planned your program carefully, you seldom will need to change a course after completing registration. However, if a change should become necessary occasionally, the procedure is as follows: Fill out a "Cancel-Add" form obtained in the department office, have it signed by your adviser, and tally it if required. After the sixth week, approval of the Committee on Student Scholastic Standing (sometimes called Scholastic Committee) is also required.

The addition of a new course after the first week of classes must be approved by the director.

Courses may be canceled without grade during the first 6 weeks of classes, although if the total load falls below 12 credits, the approval of the Scholastic Committee is required. After the first 6 weeks, cancellation of a course in which you are failing is recorded as "cancellation with fail"; if you are passing, it is recorded "cancellation with no grade." During the last 2 weeks before the beginning of final examinations, cancellation is not permitted except under most unusual circumstances.

**Credit Load per Quarter**—Most students take about 15 credits of work each quarter. To take less than 12, you must secure permission from the Scholastic Committee. Registration in excess of 18 quarter credits must be approved by the Scholastic Committee.

**Repeating a Course**—You may repeat without special permission a course which you have failed, and both the old and new grades will then stand on the record. You need not repeat the failed course, however, unless it is a prerequisite to other courses you wish to take or is required for graduation. In such case, the department may at its discretion delete the first grade when calculating grade point average.

**Final Examinations**—The all-University final examination schedule is published each quarter in the *Class Schedule*. Students are required to take examinations at the scheduled time. However, if the student has a conflict in examinations or if he has three examinations in 1 day, he should report that fact to the department office in 114 Vincent Hall at least 10 days prior to the final examination period for possible adjustment. Any other examination schedule problems should be presented to the Scholastic Committee.

**Grades and Grading**—Letter grades (A, B, C, D, F, I, P, and N) are assigned for each course at the end of the quarter. These are made available to the student through the Office of Admissions and Records and the department office.

The grade of I (Incomplete) is a temporary grade indicating that a student has a satisfactory record in work completed and, for justifiable reasons satisfactory to the instructor, was unable to complete the work of the course by the end of the quarter. The work must be completed by the end of the sixth week of the next quarter in residence.

Ordinarily, an F grade must be followed by a repeating of the course. This is always true in the case of a course required for the degree. In the case of an elective the decision as to repeating the course will be made by the student and/or the Scholastic Committee.

Specific courses required for admission to the program in mortuary science must be taken on the A-F basis. General requirements to be met with electives can be fulfilled with courses on the P-N grading system.

**Grade Points and Grade Point Average**—The quality of work is indicated by grade points. Grade points are assigned to course grades as follows: to each credit with a grade of A, 4 grade points; to each credit with a grade of B, 3 grade points; to each credit with a grade of C, 2 grade points; to each credit with a grade of D, 1 grade point. The grade of F carries no grade points. Thus for a 3-credit course completed with a grade of B the student would be assigned 9 grade points.

The grade point average (GPA) is defined as the number of grade points earned divided by the total number of credits earned and failed (grades A to F). A grade point average of 2.00 (C average) is the minimum standard required for satisfactory progress toward the bachelor of science degree. Each student is notified quarterly of his current and cumulative grade point average and scholastic standing.

**Scholastic Probation**—When the grades at the end of a quarter indicate that a student is in serious scholastic difficulty, he is placed on probation. While on this status he is afforded special aid in discovering the reasons for his difficulty and in finding ways of overcoming it. He is given 1 quarter to show improvement. Usually the probation period will not be extended beyond 2 quarters unless the Scholastic Committee is convinced that the causes of the student's poor work are beyond his control and will soon disappear.

The probationary status indicates serious doubt whether the student will succeed in college. While poor grades are a primary factor in determining this status, a record of continuous cancellations and incompletes likewise indicates scholastic weakness.

A student may also be placed on probation if:

1. He is admitted from another institution with an average of less than 2 grade points per credit.
2. At the discretion of the department his initial admittance is based on qualifications below those ordinarily required.

When the student's work improves to a point where he is again making normal progress toward a degree, he will be notified of his removal from probationary status.

**Exclusion from College**—Students may be excluded from the department under one of the following headings:

1. **Dropped for Low Scholarship**—A student who fails to meet the terms of his probation may expect to be dropped.
2. **Hold for Committee Clearance**—Sometimes a student's scholastic difficulty indicates that he should not continue for the time being even though the record hardly requires official drop action. In such case his later return must be approved by the Scholastic Committee.



## *Department of Mortuary Science*

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3. *Discontinued*—If a student is pursuing an appropriate course but is handicapped by conditions he cannot control (ill health, necessary outside work, etc.), he may be required to discontinue his registration until these conditions have improved. When discontinuance takes place at any time other than the end of the quarter, the courses for which he is registered may be recorded as canceled without grade.

**Readmission to College**—Students excluded from the department are allowed to return only with the permission of the Scholastic Committee.

Students classified as discontinued must present evidence that the conditions which hindered their work have been remedied.

A student who has been dropped may petition for readmission after an interval of 1 year. The petition must present specific evidence that he is now likely to succeed with college work.

Students who return under the provision of the preceding paragraphs will be registered on probation. They may be dropped at any time that their work is unsatisfactory.

**Canceling Out of College**—This always involves referral to the department office, since members of the department staff are interested in being of any assistance possible. You probably will want to discuss one or more of the following topics: academic standing and possibilities of return or transfer, grades to be awarded, wisdom of the decision to cancel, financial needs, job placement, and others. Following your interview at the department office you report to the department window at 105 Morrill Hall (window 20) to check on your financial status, cancel courses for the current or succeeding quarter, and generally clarify your relationship with the University.

If you are likely to enter the armed services upon leaving the University, you will find the discussion especially important. If you wish, the department will prepare a summary of your academic and extracurricular background for your use in seeking proper placement in the services.

**Petition for Exemption from Department Regulations**—The faculty has set up certain regulations to help students achieve a good education. These rules are believed wise for most students but occasionally they may work to the educational disadvantage of a particular person. In this event, he may ask for personal exemption through a petition to the Scholastic Committee. The committee is empowered to make exceptions to a requirement provided the exceptions are consistent with the spirit of the rule.

Regular petition blanks are available in the department office. An endorsement from the faculty adviser or instructor should be secured if appropriate. If desired, the student will be given an opportunity to present his case in person. When the committee has taken action, the reply will be mailed to the student or may be picked up in the department office.

**Scholastic Committee**—Almost every student has occasion from time to time to consult the Committee on Student Scholastic Standing (usually called the Scholastic Committee). It is important, therefore, that its functions be clearly understood.

*What is it?* It is a committee of the faculty charged with the interpretation and enforcement of department regulations. It is empowered also to make exceptions to department regulations when those regulations work to the educational disadvantage of a particular student, provided the basic spirit of the regulation is maintained.

*How can it help you?* Often a student is in doubt about his obligations or some rule seems to stand in the way of his objective. The Scholastic Committee is designed to help with such problems. It has special counselors available for consultation, and often an adjustment can be worked out.

*How does one use it?* When help is needed, go to the department office. A representative of the committee will be glad to talk with you. To be exempted from a regulation, you must prepare a written petition which is turned in at the department office.

**Orientation Programs**—The Department of Mortuary Science joins with other divisions of the University in helping new students to get acquainted with one another and with the department program. Usually this involves 2 days of testing, counseling, and group activities. You will profit from group discussions of the requirements and opportunities available. For questions that arise later, you may always consult your department office.

**Department Placement Service**—The department maintains a continuing placement service for its students, graduates, and former students. Each graduate must complete certain prescribed forms which become a part of his permanent file. Licensed professional services are often requested and the department endeavors to service these requests from its files of former students. Graduates are given detailed information about the use of the placement service following graduation.

**Self-Support**—The University Employment Bureau assists students who find it necessary to earn part or all of their expenses. The department also arranges for part-time work in the funeral homes in Minneapolis and St. Paul. However, the program in mortuary science is a full one and some students may find it difficult to devote many hours a week to outside employment.

**All-University Personnel Services**—Several specialized personnel services are provided by the University for all students. Some of these are:

For professional help on a personal problem or vocational choice, go to the Student Counseling Bureau, 101 Eddy Hall.

To learn about student activities, visit the Student Activities Bureau at 4 TNM; the Coffman Union Program Office in 229 Coffman Memorial Union; or the St. Paul Student Center on the St. Paul Campus.

For financial help, apply at the Bureau of Student Loans and Scholarships, 107 Armory Building.

For a part-time job on or off campus, apply at the Student Employment Bureau, 30 Wulling Hall.

For help in improving reading or other study skills, use the Reading and Study Skills Clinic, 101 Eddy Hall.

For aid with speech difficulties, consult the Speech and Hearing Clinic, 225 Shevlin Hall.

For questions concerning veterans' benefits, go to 105 Morrill Hall.

For help in finding a room or apartment, see the Student Housing Bureau, 209 Eddy Hall; for married students, 180 Wesbrook Hall.

For assistance and advice as a foreign student, contact the Office of the Foreign Student Adviser, 717 E. River Rd.

For assistance with health problems, go to the University Health Service or the St. Paul Campus Health Service.

For assistance with legal problems, consult the Legal Aid Clinic, 133 Fraser Hall.

For information concerning residence halls, write to the Director of Housing, 180 Wesbrook Hall, University of Minnesota, Minneapolis, Minnesota 55455, or directly to the hall of your choice.

## Financial Aids

### Awards

**Award of Merit**—Each year the Minnesota Funeral Directors Association will award at the Class Day festivities a certificate of merit to the outstanding student in mortuary science. The student will be selected by a committee from the association, the Minnesota State Department of Health Committee of Examiners in Mortuary Science, and the faculty. The award is made on the basis of scholarship, citizenship, professional attitude, and personality.

**DIF Award**—*Diligentissime Incubuit Fortiterque* (he has applied himself with the greatest diligence and vigorously). This award was established in 1951 and is given annually to a member of the graduating class in mortuary science. The student selected for this award will be one who best exemplifies the qualities of perseverance, diligence, and cooperation, and who manifests the greatest rate of academic improvement, regardless of final grade point average. The award is a gold key appropriately inscribed and will be presented at Class Day festivities.

**Director's Service Award**—The director of the department each year presents a service award to the student who has contributed the most to his class and the department. The award, in addition to personal service, takes into consideration attitude, leadership ability, and consciousness of citizenship responsibility. It is a gold key appropriately inscribed and is presented at Class Day festivities.

**Frigid Fluid Award**—The Frigid Fluid Company of Chicago, Illinois, annually presents a gold engraved plaque and a \$100 United States Savings Bond to the student who excels in the proficiency in the mortuary arts and sciences and is likewise proficient in the other areas of the curriculum. Nominations for the award are screened by a faculty committee and the presentation is made at Class Day festivities.

### Scholarships

**MFDA Scholarship**—The Minnesota Funeral Directors Association sponsors a full-tuition scholarship each year. This distinctive scholarship shall be open to residents of Minnesota who are pursuing or intend to pursue advanced training in the Department of Mortuary Science, and who at the effective date of the scholarship are within 9 months of graduation. Selection criteria include the following: academic aptitude, professional promise, personal attributes, leadership potential, and financial need. Interested students may request an application from the Bureau of Student Loans and Scholarships or the Department of Mortuary Science office.

**Silver Anniversary Fund**—This fund is established by the classes of the department that celebrate their 25th anniversary of their graduation with their reunion. Its resources are used for a variety of purposes, one of which is student aid. Each year several students are given quarterly tuition grants. Recipients are nominated by the faculty on the basis of need and scholarship.

**A. A. Hodroff Scholarship**—This scholarship is a \$500-a-year stipend given to a student selected by the faculty on the basis of need, scholarship, and professional promise. The grant is to cover tuition, books, and other fees incidental to matriculation. The donors are the L.H. Kellogg Chemical Company and the Kelco Supply Company.

The American Board of Funeral Service Education administers a nationwide scholarship fund. All students interested in determining their eligibility should contact: The American Board of Funeral Service Education, William H. Ford, Administrator, 201 Columbia Street, Fairmont, West Virginia.

**Fred C. Olson III Memorial Scholarship** is available, by application, to any regularly matriculated student in mortuary science. It consists of awards in varying amounts from \$100 to \$500 made by the family of a former department student who was accidentally killed during his senior year of matriculation.

**Mortuary Science Service Fund** is a fund established and maintained by former students and friends of the department. The resources of this fund are available for special services and programs of benefit to students.

**Mortuary Science Emergency Loan Fund** was established to assist those students who, due to extenuating circumstances, need small amounts of cash for a short (30-60 days) period of time. Applications for this type of assistance are made through the director.

**Past Presidents Fund** is established by former presidents of the Minnesota Funeral Directors Association. Annually, scholarship grants are made from this fund in varying amounts.

### **Student Organizations**

The **Student Association of the Department of Mortuary Science** is a recognized University student organization and each student matriculated in the Department of Mortuary Science is a member.

The purpose of the association is to establish a government to serve as a sounding group for student opinion regarding matters of mortuary education, to create a liaison between the students and faculty, to formulate and implement student policy, and to serve as a public relations agency for mortuary education.

**Alpha Mu Sigma** is the professional fraternity for students in mortuary science. It is a recognized University student organization. Its program is both social and educational. Membership is recommended as a "first step" in professional organizational involvement.

**University-Approved Organizations**—These groups are open to membership for all department students if they meet the specified qualifications. A wide variety of experience is available in such areas as vocational, social, political, social service, and recreational interests.

## DESCRIPTION OF COURSES

**Course Symbols**—The following symbols used in course descriptions have been adopted for all University bulletins.

- † To receive credit, all courses listed before the single dagger must be completed.
- ‡ Students may enter sequence course in any quarter which precedes the double dagger.
- § No credit is granted if credit was received for equivalent course listed after section mark.
- ¶ Concurrent registration is allowed with the course listed after paragraph mark.
- \* Consent of instructor is required.
- △ Consent of department or school offering course is required.

### Mortuary Science (Mort)

- 50. **History and Orientation.** Overview of funeral service; history, customs, development; personal qualifications, aptitudes. Field trips. (2 cr)
- 51. **Mortuary Law.** Licensing; restrictions on mortuary sites; business organization; duties, rights, and liability for final disposition; tort liability; cemetery law; wills and administration of estates; business law. (5 cr)
- 55. **Public Health, Laws and Regulations.** Principles and practices of public health administration; organization and functions of health agencies in local, state, and federal government. Role of the funeral licensee; regulatory procedures. (2 cr; prereq PubH 3 or 50 or GC 10B, regis in Mort Sci)
- 56. **Embalming Chemistry.** Fundamentals of organic and biochemistry. Chemical changes in the human body during life, after death, and during chemical preservation, including disinfection, solutions, toxicology and embalming fluids. (4 cr; prereq introductory course in general chemistry, regis in Mort Sci)
- 62. **Psychology of Funeral Service.** Applied psychological principles helpful in dealing with clientele, especially those in an emotional crisis. (2 cr; prereq Psy 1-2)
- 63. **Restorative Art.** Basic drawing, design, and color theory. Anatomical drawing and modeling. Color in cosmetics and interior decoration; physical effect of colors upon forms; psychological effect of colors upon people. Special laboratory skills. (4 cr; prereq regis in Mort Sci)
- 64. **Funeral Management.** Professional overview and image; current practices and procedures; funeral direction; professional regulations; field trips. (5 cr; prereq regis in Mort Sci)
- 65. **Embalming.** Theory and procedures of embalming. (5 cr; prereq Biol 2, introductory course in Anatomy or \*, regis in Mort Sci)
- 74. **Funeral Management.** Funeral home operations; records and forms. (3 cr; prereq 64)
- 75. **Embalming.** Consideration of special treatments. (3 cr; prereq 65)
- 76. **Clinical Training.** Practical experience in embalming; evaluations of theory. (2 cr; for nondegree students only; prereq 65)
- 77. **Clinical Training.** Practical experience in embalming; evaluations of theory. (2 cr; for nondegree students only; prereq 76)
- 90. **Practicum in Funeral Service.** Practical experience during 1 quarter in an off-campus funeral home as assigned by the department. (12 cr; prereq sr)
- 91. **Practicum Conference.** Discussion of practicum, practicum reports, and assigned readings of funeral service literature. (3 cr; prereq ¶90)

## Description of Courses

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92. **Seminar.** Funeral service survey based on practicum experience. (5 cr; prereq 90 and 91)
99. **Independent Study.** A report based on study and research in an area of student's interest in funeral service. (Cr ar; prereq sr)
81. **Seminar: Funeral Law.** (Cr ar; prereq #)
82. **Seminar: Psychology.** (Cr ar; prereq #)
83. **Seminar: Restorative Art.** (Cr ar; prereq #)
84. **Seminar: Funeral Management.** (Cr ar; prereq #)
85. **Seminar: Embalming.** (Cr ar; prereq #)
86. **Seminar: Funeral Service.** (Cr ar; prereq #)

*Note:* Completion of courses 50 through 77 are minimum requirements for certification.

### Accounting

**Principles of Accounting.** Methods of recording, reporting, and interpreting business events. Use of accounting as a tool of business management. (5 cr)

### Biology

**General Biology.** Introduction to living things, both plants and animals, and to the major biological concepts. Structure, function, classifications, and evolution of organisms. (10 cr)

### Chemistry

**General Principles of Chemistry.** Introduction to chemistry from standpoint of atomic structure; periodic properties of elements and compounds derivable from structural considerations; laws governing behavior of matter, theories of solutions, acids, bases, equilibrium. (5 cr)

### English

**Freshman English 1-2-3.** A course in composition in which literature serves both as reading material and as the subject matter for writing. Not a course in the history of literature or in literary criticism. (9 cr)

### Psychology

**General or Introductory Psychology.** Science of human behavior with emphasis on development of the individual. (5 cr)

### Public Health

**Personal and Community Health.** Fundamental principles of health conservation and disease prevention. (3 cr)

### Reserve Officers' Training Corps

The ROTC, through its three services—Army, Navy, and Air Force—gives college men students an opportunity to combine military or naval training with their

## *Department of Mortuary Science*

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academic work. Students are eligible for ROTC enrollment if they are registered in academic courses leading toward degrees, if they are United States citizens, and if they meet physical and other qualifications. The general requirements of the three services and their special characteristics are described in the *Army-Navy-Air Force ROTC Bulletin*. Also you may make inquiries personally or by letter at the following offices in the University Armory: Military Science, room 108; Naval Science, room 203; Aerospace Studies, room 3.

### **Speech**

**Fundamentals of Speech.** Development of basic skills in meeting a variety of speech situations; extemporaneous speaking, oral reading, discussion. Development of basic understanding of speech processes and forms. (5 cr)

## ELECTIVES

Each student is permitted to take elective courses and is required to take enough elective credits to meet the graduation requirements. Most students need approximately 47 elective credits, 15 of which must be in Upper Division, to meet the graduation requirement of the bachelor of science degree. The elective courses should be selected in keeping with the student's aptitudes and interests. Each student should try to choose his electives from specified areas of concentrations. For those students who plan to go on working toward an advanced degree, it is important that they make a careful selection of elective courses in order to facilitate the planning of their program for advanced degrees. All elective courses must be approved by the student's adviser at the time of registration. The following courses are suggested for electives:

### *Suggested Courses to Meet Elective Requirements*

#### **Communications, Language, Symbolic Systems**

Comp 27, 28, 101-103  
Spch 6, 51, 55, 56  
Foreign language—all beginning courses  
Phil 1-3, 10, 50-53  
Math 1-3, 10, 15, 20  
Stat 41  
Jour 1, 11  
Rhet 47  
Soc 45  
Clas 48T, 68

#### **Physical and Biological Sciences**

Biol 50, 51  
GeCh 4-6  
OrCh 61-63  
Public health  
Phys 1-3  
Phsl 2, 51  
Ast 11, 51  
Bot 10-12  
Geol 1,2

#### **Man and Society**

Psy 4-6, 10, 55, 70, 75  
Acct 24-26  
Soc 1, 3, 53, 90, 91, 120, 140, 141, 142, 152  
SSci 1-3, 51-53, 71-73  
Anth 1A, 2A, 68, 100, 150, 161, 165  
Hist 1-3, 23, 24, 50-52, 79-81  
Pol A, B, 1, 2, 25, 26, 30, 60, 61, 80, 81  
Econ B, C, 1, 2, 20, 50A, 50B, 80  
Geog 1, 4, 61, 63, 67, 101, 102  
PO 1

#### **Artistic Expression**

ArtS 10, 11, 20, 23, 24, 25, 40-42, 51, 54, 55  
ArtH 1-4, 50, 56-58  
Mus 1, 4, 31-36, 50, 51-53  
Hum 1-4, 1A-3A, 11-13, 21-23, 51-54, 61-63, 71-73  
Th 11, 12, 21-23, 24  
Engl 21-23, 37-39, 52-56, 66, 67, 72-74, and foreign language literature courses

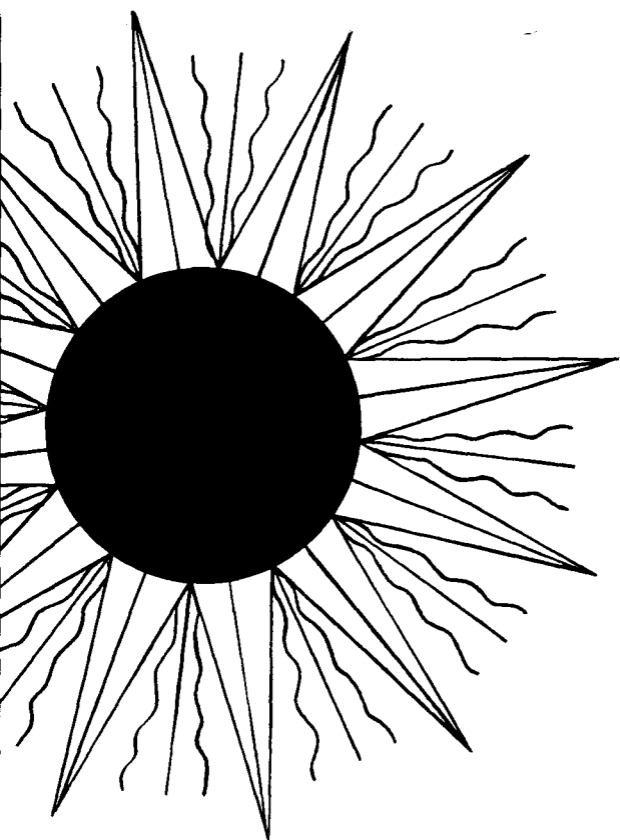
**Special Notice**—Any individual contemplating licensure in the field of funeral service should determine the qualifications for such licensure by writing either to the State Board of Health or to the State Board of Embalmers and Funeral Directors in the capital city of the state in question. Inasmuch as these regulations are in a constant state of flux, the most current information available should be obtained. If an individual is in doubt as to the procedure to be followed in determining qualifications for licensure, he may seek additional assistance from the office of the Director of Mortuary Science, 114 Vincent Hall, University of Minnesota, Minneapolis, Minnesota 55455.



UNIVERSITY  
MINNESOTA  
BULLETIN



1967-70



**ADMINISTRATION**

*"The health of the people is really the foundation upon which all their happiness, and all of their powers as the state depend."*

*—Benjamin Disraeli*

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The contents of this bulletin and of other University bulletins, publications or announcements are subject to change.

Merton E. Knisely, A.A., Administrator, St. Luke's Hospital, Milwaukee, Wisconsin  
 Charles C. Lindstrom, M.H.A., Director, St. Luke's Hospital, Kansas City, Missouri  
 Robert C. Millar, B.A., Administrator, Abbott Hospital, Minneapolis  
 Wade Mountz, M.H.A., Administrator, Norton Memorial Infirmary, Louisville, Kentucky  
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 Roger R. Starn, M.H.A., Administrator, St. Luke's Hospital, St. Paul  
 Carl A. Streufert, M.H.A., Administrator, Lutheran Hospital and Medical Center, Wheat Ridge, Colorado  
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 Paul H. Vogt, M.H.A., Administrator, Hennepin County General Hospital, Minneapolis  
 William N. Wallace, M.H.A., Executive Vice President, The Charles T. Miller Hospital, St. Paul  
 Frank W. Walter, M.B.A., Director, St. Barnabas Hospital, Minneapolis  
 Kenneth R. Weaver, M.H.A., Associate Director, Vancouver General Hospital, Vancouver, B.C., Canada  
 Stuart A. Wesbury, Jr., M.H.A., Associate Director, Stand's Teaching Hospital and Clinics, University of Florida, Gainesville, Florida  
 John H. Westerman, M.H.A., Director, University of Minnesota Hospitals  
 Rolland E. Wick, M.H.A., Administrator, Children's Hospital, San Francisco, California  
 Russell B. Williams, M.H.A., Administrator, Kaiser Foundation Hospitals, Los Angeles, California  
 Howard M. Winholtz, M.A., M.H.A., Administrator, Rochester Methodist Hospital, Rochester, Minnesota

### Special Lecturers

Mark Anderson, Director, Chaplaincy Services, Swedish Hospital, Minneapolis  
 Otto Arndal, M.D., Chief, Hospital Accreditation Program, Chicago, Illinois  
 Harry Becker, Professor of Community Health, Albert Einstein Medical College, New York, New York  
 John J. Boardman, Jr., Hospital Administrator, Kaiser Foundation, Los Angeles, California  
 O. J. Campbell, M.D., Surgeon, Minneapolis  
 John B. Coleman, M.D., Radiologist, St. Paul  
 Thomas P. Cook, Executive Secretary, Hennepin County Medical Society, Minneapolis  
 James P. Cooney, Jr., M.H.A., Ph.D., American Hospital Association, Chicago, Illinois  
 David M. Craig, M.D., Internist, St. Paul  
 Richard T. Crist, President, Minnesota Hospital Service Association, St. Paul  
 Edwin L. Crosby, M.D., Executive Director, American Hospital Association, Chicago, Illinois  
 Ann Crowley, Director, Dietetics, University of Iowa, Iowa City, Iowa

Nelson H. Cruikshank, Director, Department of Social Security, AFL-CIO, Washington, D.C.

John M. Danielson, Executive Vice-President, Evanston Hospital Association, Evanston, Illinois

C. Wesley Eisele, M.D., Director, Post-graduate Medical Education, University of Colorado, Denver, Colorado

Paul M. Ellwood, Jr., M.D., Executive Director, American Rehabilitation Foundation, Minneapolis

Bruce E. Fischer, Administrator, Anoka State Hospital, Anoka, Minnesota

Joseph F. Follmann, Jr., Director of Information and Research, Health Insurance Institute, New York, New York

James E. Hague, Editor, Journal of the American Hospital Association, Chicago, Illinois

James A. Hamilton, Professor Emeritus, Program in Hospital Administration, South Duxbury, Massachusetts

Edith Lentz Hamilton (former Associate Professor, Program in Hospital Administration, University of Minnesota), South Duxbury, Massachusetts

Mrs. Russell Hanson, President, Hospital Auxiliary, Benson, Minnesota

Warren B. Hempstead, Sales Manager, Physicians and Hospitals Supply Company, Inc., Minneapolis

E. Brad Hinker, Public Accountant, Minneapolis

Eugene H. Keating, Attorney-at-Law, Minneapolis

Miland E. Knapp, M.D., Psychiatrist, Minneapolis

John E. Kralewski, Director, Division of Health Care Administration, University of Colorado, Denver, Colorado

Eleanor Lambertson, Director, Division of Nursing Education, Columbia University, New York, New York

John R. Mannix, Executive Vice-President, Blue Cross of Northeast Ohio, Cleveland

Fred A. McNamara, Hospital Consultant, Washington, D.C.

Walter J. McNerney, President, Blue Cross Association, Chicago, Illinois

Winston R. Miller, Program Director, Northland Regional Medical Program, St. Paul

David Y. Morris, President, University of Minnesota Employees Union, Local 450, Minneapolis

Lyla Niederbaumer, Director of Nursing, University of Kansas Medical Center, Kansas City, Kansas

David E. Olsson, President, San Jose Hospital, San Jose, California

Andrew Pattullo, Director, Division of Hospitals, W. K. Kellogg Foundation, Battle Creek, Michigan

John W. Poor, Director, Division of Public Assistance, Minnesota Department of Public Welfare, St. Paul

Gerald A. Regnier, Executive Director, Minnesota State Bar Association, Minneapolis

Clarence J. Rowe, M.D., Psychiatrist, St. Paul

Alvin L. Schultz, M.D., Internist, Minneapolis

Martin A. Segal, M.D., Pathologist, Methodist Hospital, Minneapolis

Virgil Slee, Director, Commission on Professional and Hospital Activities, Inc., Ann Arbor, Michigan

J. E. Smits, Regional Hospital Administrator, Kaiser Foundation Hospitals, Los Angeles, California

Richard J. Stull, Executive Vice-President, American College of Hospital Administrators, Chicago, Illinois

George G. Ulmer, President, Physicians and Hospitals Supply Company, Inc., Minneapolis

Harry Umeda, Controller, Fairview Hospitals, Minneapolis

David J. Vail, M.D., Medical Director, Minnesota Department of Public Welfare, St. Paul

Donald L. Van Hulzen, Executive Director, Joint Staff of the Metropolitan St. Paul and Minneapolis Planning Councils, St. Paul

Geraldine B. Wedel, Assistant Executive Director, Minnesota Nurses Association, St. Paul

Donald E. Wood, Executive Director, Twin City Hospital Association, St. Paul

# PROGRAM IN HOSPITAL ADMINISTRATION

## GENERAL INFORMATION

The hospital as a social institution plays a vital role in the physical and mental health of the people of our nation. In 1875, there were fewer than 200 hospitals in the United States and only 35,000 hospital beds. Rapid advances in the medical sciences during the 20th century, together with a tremendous rise in the utilization of hospitals, created a demand for greatly expanded and improved facilities. As a result, the number of hospitals has mushroomed to more than 7,000 and the number of hospital beds to more than 1.7 million. As a group, hospitals today comprise one of our country's largest and most essential service enterprises in the complex field of health care.

The growing importance of hospitals as a center of community health resources and the innate complexity of their organizational structure have made the management of these institutions a very specialized responsibility. The University of Minnesota was one of the nation's colleges and universities to recognize early the need for professionally educated administrators. In 1946, with the assistance of a 3-year grant from the W. K. Kellogg Foundation, it established the Program in Hospital Administration.

Although this program and other programs, leading to a Master's degree in hospital administration, have graduated a substantial number of individuals into the field, the demand for competent hospital administrators still exceeds the supply and will continue to do so for many years to come. Opportunities for growth and development in the health care field are extensive.

The Master's degree program was designed to produce practitioners in hospital and health care administration and to help develop in them a broad philosophy toward the health field, so that its graduates might take their proper places in providing not only sound institutional management but also leadership within their professional organizations and in the community at large.

Throughout the first decade of the Master's program, another set of needs, directly relating to scholarship, began to be recognized. Teachers must be prepared for university hospital administration programs in the United States and elsewhere. Scholars capable of carrying on research in the health field financed by governmental agencies and private foundations must be developed. Some of these needs can be met by scholars trained in such areas as sociology, psychology, economics, and industrial engineering, but each of these persons is trained to see just one part of the complex field of hospital and health care administration. Someone must take the overview, must be in the position to unite these many facets and exert leadership toward common purposes and goals. The doctoral program in hospital administration is designed to help fill these needs and focuses on the role of the hospital and other health care institutions in society.

## Admission Requirements

**Master's Degree Program** — It is realized that the students who apply for admission will present varying backgrounds and the program has been designed with this fact in mind. Applicants may be college graduates without specialty

## *Program in Hospital Administration*

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or they may be physicians, registered nurses, business administration graduates, clergymen, members of religious orders, graduates of specialized professions within the health and welfare field, or others with special interests and aptitudes for the administration of hospitals and other health care organizations. Work experience in hospitals and related health care institutions or organizations is desirable but not essential.

All applicants must possess a Bachelor's degree from an accredited educational institution. Individuals with a broad liberal arts education are favored as well as persons with a more specialized undergraduate degree. Only full-time students are normally accepted and no credit will be given for previous experience or instruction that would shorten either the academic year or the residency period. Applicants must also show evidence of personal capability, fitness, and motivation for work in the hospital field, and must have completed college level courses in the elements and principles of accounting. Prospective students who have not completed the latter may take these courses during the summer quarter or by correspondence prior to the beginning of the academic year.

Other courses which provide a desirable background but which are not required for admission include human physiology, general microbiology, principles of economics, principles of sociology, English composition, business law, mathematics, biology, business policy, cost accounting, government regulation of business, labor problems and trade unionism, public administration, recent social legislation, psychology, public speaking, statistics, and social research methodology.

All communications should be addressed to: Director, Program in Hospital Administration, School of Public Health, 1260 Mayo Memorial Building, University of Minnesota, Minneapolis, Minnesota 55455. Admission application blanks will be supplied upon request. All applications should be submitted preferably before January 1 of the year in which the applicant intends to enter the program and must include the following items:

1. Two completed admission forms.
2. Two certified transcripts of the applicant's college record.
3. A letter indicating the applicant's previous work experience as well as his or her reasons for selecting the field of hospital administration.
4. A \$10 credentials examination fee which is nonrefundable (checks to be made payable to the University of Minnesota).
5. Names of three references (preferably connected with hospital, health, or medical field and work experience).
6. An acceptable score on the Miller Analogies Test, graduate level.

Arrangements may be made to take the MAT examination at appropriate test centers located at many colleges and universities throughout the United States.

Applicants are expected to have an interview either with a member of the faculty or, if too distant, with an alumnus of the Program in Hospital Administration selected by the faculty.

To insure that all students receive the maximum benefit from their academic period, only a limited number of applicants, usually 30 to 35, is accepted each year for admission to the program. An advisory committee assists the program director in screening applicants. Selections are based on academic

## General Information

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ability, personality, motivation, work experience, and references. Applicants are notified of their acceptance or rejection about April 1.

**Doctoral Program** — Since this program is designed to prepare those who wish to pursue scholarly careers as teachers or research workers in the highly complex field of health care, it provides for both intensive and broad education. The program is therefore interdepartmental in character and comes under the administration of the Graduate School, all the requirements of which must be met. Students successfully completing the program will have earned a doctor of philosophy degree. Some will have a major in hospital administration; others who wish to major in a social science may take a minor in hospital administration; and others may wish to major in hospital administration and also to major in a social science.

In any case, a candidate for doctoral work must have demonstrated marked academic ability and show potential for independent study and research. He must have at least a Bachelor's degree from an accredited educational institution, preferably with breadth in the social sciences, mathematics, and administration. The attainment of a Master's degree in hospital administration will serve ordinarily but not absolutely as the first step for those who wish to major in this field at the doctoral level. Graduate work satisfactorily completed prior to entering the program may be submitted for credit. Each student's program will be individually planned to build upon his own background and interests. He will have two advisers, one from hospital administration and one from the social science field in which he takes his major or minor subject. Before taking his preliminary examinations for the doctorate, the student will be required to pass a reading comprehension test in one or more foreign languages and to have met requirements in either a special research technique or a collateral field of knowledge.

Application for the doctoral program may be initiated either by correspondence with the Graduate School office or by writing directly to: Director, Program in Hospital Administration, School of Public Health, 1260 Mayo Memorial Building, University of Minnesota, Minneapolis, Minnesota 55455. Admission application blanks will be supplied upon request. Before the admissions process is completed, the following items will be required:

1. Completed application forms, provided by the Hospital Administration office.
2. Two certified transcripts of the applicant's college records, both undergraduate and graduate.
3. A letter indicating his previous work experience and his reasons for wishing to enter this program.
4. The names of three references, persons who can attest to the applicant's scholarship, personality, and fitness for a teaching or a research career.
5. An acceptable score on the Miller Analogies Test, Graduate Level.

A personal interview with a member of the faculty is considered highly desirable but is not compulsory.

The number of candidates is not limited in the doctoral program, but it is anticipated that classes will be small. The intention is to produce quality in scholarship rather than quantity.

## Program in Hospital Administration

### Living Expenses

Living expenses will, of course, vary tremendously from person to person. As a general guide for single students, the University of Minnesota estimates that the average cost to the student for room and board in University residence halls during the 1968-69 academic year will range from \$287-\$357 per quarter. This figure does not include laundry and clothing expenses nor does it account for such items as recreation and travel.

It is virtually impossible to estimate living costs for married students because of the variance in the size of their families, the standard of living which they wish to maintain, and the type and size of the accommodations they desire. Such students will have to estimate these expenses for themselves on the basis of their own personal experience. Rent is a major item of expense for married students. As a general rule, they can expect to pay from \$80-\$90 per month for housing in University-maintained facilities and a higher amount for private accommodations. The figures quoted are based on the rental rates in effect for the 1968-69 academic year and, except for Thatcher Hall, include heat and all other utilities. Information concerning residence halls and University housing for married students may be obtained from: Director of University Housing, 180 Westbrook Hall, University of Minnesota, Minneapolis, Minnesota 55455.

Information about private rooming houses may be obtained from the Student Housing Bureau at 209 Eddy Hall, which can also assist married students in finding suitable housing off campus.

### Expenses

(Subject to change)

#### Master's Degree Program

(1968-1969)

Academic Year	Resident of Minnesota		Nonresident of Minnesota	
	Per Quarter	Per Year	Per Quarter	Per Year
Tuition .....	\$168.00	\$504.00	\$380.00	\$1,140.00
Incidental* .....	37.00	111.00	37.00	111.00
<b>Total</b> .....	<b>\$205.00</b>	<b>\$615.00</b>	<b>\$417.00</b>	<b>\$1,251.00</b>
Summer Session				
Tuition .....	\$ 84.00		\$ 84.00	
Incidental .....	18.50		18.50	
Foreign .....	2.50		2.50	
Residency Year				
Tuition (1 quarter only) .....	\$168.00		\$380.00	
Course fee (1 quarter only) .....	100.00		100.00	
<b>Total**</b> .....	<b>\$268.00</b>		<b>\$480.00</b>	
Graduation Fee .....	\$ 10.00		\$ 10.00	

\* The quarterly incidental fee entitles students to the privileges of Coffman Memorial Union, the University Health Service, the Speech and Hearing Clinic, the Student Counseling Bureau, the *Minnesota Daily* (including the Official Daily Bulletin), the Staff-Student Directory, and University recreational facilities.

\*\* The total fees for the residency year are due at the beginning of fall quarter of that year.



**Doctoral Program**

(1968-1969)

	Resident of Minnesota	Nonresident of Minnesota
	Per Quarter	Per Quarter
Tuition (for more than 6 credits) .....	\$104.00	\$280.00
Incidental* .....	37.00	37.00
Total .....	\$141.00	\$317.00
Thesis Only .....	\$ 20.00	\$ 20.00

\* The quarterly incidental fee entitles students to the privileges of Coffman Memorial Union, the University Health Service, the Speech and Hearing Clinic, the Student Counseling Bureau, the *Minnesota Daily* (including the Official Daily Bulletin), the Staff-Student Directory, and University recreational facilities.

**Student Services and Activities**

**Library** — The University's system of libraries ranks tenth in size among the university research libraries in the United States. Diehl Hall, which houses the Bio-Medical Library (opposite the Mayo Memorial Building where the Program in Hospital Administration is situated), contains the James A. Hamilton Collection of books and journals of particular interest to future hospital administrators.

In addition to the above facilities, the Program in Hospital Administration has one reading room of its own. The volumes, journals, and other materials in this room are specifically concerned with hospitals, management, and related areas such as medicine and public health.

**University Health Service** — The maintenance of student health is a major concern of the University. The Health Service, located adjacent to the University Hospitals, provides complete medical care facilities and health counseling for all students.

**Food Services** — Most of the University dormitories operate dining rooms for their residents. In addition, Coffman Memorial Union has a large cafeteria, two grills, and a soda fountain. The Union also maintains "commuter" lunchrooms for students who desire to bring their own lunches.

**Cultural, Social, and Recreational Opportunities** — Numerous cultural, social, and recreational opportunities are available to students on the University campus and in the surrounding area.

For additional information regarding student services or cultural, social, and recreational opportunities, consult the University of Minnesota *General Information Bulletin*.

**Financial Aids**

**Traineeships** — A limited and varying number of United States Public Health Service traineeships is available annually and should be applied for on special application forms at the time of application for admission. Both Master's degree and Doctoral students are eligible to apply for these traineeships.

## Program in Hospital Administration

**Student Loans** — Numerous loan funds are available to hospital administration students who need financial assistance. These funds vary somewhat in their rates of interest, the amount of money that can be borrowed, and in the requirements students must meet.

The Bureau of Student Loans and Scholarships, located at 107 Armory on the Minneapolis Campus, administers the majority of the loan funds. Additional information about these funds can be secured from this bureau or from the director of the Program in Hospital Administration. Loan funds are also available through the Alumni Association's Educational Trust Fund which is administered by the officers of the Alumni Association. Information regarding these funds can be obtained through the Program in Hospital Administration.

**Student Employment** — The Program in Hospital Administration at the University of Minnesota does not object to the outside employment of its students during the academic year provided such employment does not interfere with the satisfactory completion of their studies and their other responsibilities to the program. However, the heavy schedule does not permit much time for such employment.

The Student Employment Bureau, located in 30 Wulling Hall, maintains a file of available full-time and part-time jobs on the University campus and in the Twin Cities. Students who desire the assistance of the bureau in obtaining employment must apply in person before they will be considered for any of the available positions.

The responsibilities of hospital administration students during the residency year are such that outside employment on either a full-time or a part-time basis is not permitted.

### **Partial Calendar, 1968-69**

A few of the pertinent dates of the 1968-69 academic year are as follows:

Fall Quarter 1968 .....	September 23	December 14
Spring Quarter 1969 .....	January 3	March 15
Winter Quarter 1969 .....	March 24	June 7
First Term Summer Session 1969 .....	June 16	July 18
Second Term Summer Session 1969 .....	July 21	August 22

The exact dates for the 1969-70 academic year are yet to be determined, but the training periods will be comparable.

### **Further Information**

For further details regarding expenses, housing facilities, health service, etc., consult the *General Information Bulletin*, which may be obtained upon request. Address: Office of Admissions and Records, University of Minnesota, Minneapolis, Minnesota 55455.

## PROGRAMS OF STUDY

Major Advisers — Bright M. Dornblaser, James W. Stephan, Theodor J. Litman, Vernon E. Weckwerth, John M. Phin, M.D., Janet G. Brodahl

### Master's Degree Program

The Master's degree program in hospital administration at the University of Minnesota is organized under the School of Public Health, a unit of the College of Medical Sciences. The curriculum draws upon other University departments and upon the facilities of hospitals and other health care institutions and related organizations within the region adjacent to the University. The program of study provides a central core of subjects pertaining directly to the administration of hospitals and health care institutions with supplementary instruction in related fields including public health and medical care.

The course of study is entirely on the graduate level and covers a 21-24-month period of time. It normally consists of an academic year of 3 quarters and one to two summer sessions in full-time attendance at the University. It is followed by an administrative residency under a faculty-appointed clinical preceptor in an approved hospital or other health care institution. Upon satisfactory completion of the program, students are awarded the degree of master of hospital administration.

Geographically, the University of Minnesota is well situated with respect to this program of education. With more than 30 hospitals of varying sizes and types of ownership and control in Minneapolis, St. Paul, and suburban areas, the opportunities for observation and effective field work are excellent. The support of these and other hospitals and health care institutions throughout the state is a vital and integral part of the program. The cooperation of the local, state, and regional hospital associations as well as area health care planning agencies is of similar value.

### *Objectives*

The objective of the Master's program in hospital administration at the University of Minnesota is to prepare men and women to achieve, after the requisite years of practical experience in responsible supervisory and managerial positions, the chief executive status of administrator or director of a hospital or other health care organization. The program aims to improve the capability of future health care planners as well as hospital administrators for effective participation in the making of decisions that will raise the level of operation of their health care organizations.

Recognition is given the fact that the successful hospital administrator and health care planner must have personal qualities meriting the respect of others, sympathetic understanding of human values and motivations, and an acute awareness of total community health care objectives, policies, and services. With these goals in mind, the curriculum emphasizes breadth of learning in contrast to advanced technical development.

## *Program in Hospital Administration*

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### *Academic Year*

The academic year begins with the fall quarter. Each of the 3 quarters plus the summer session work is designed to provide a mixture of courses pertaining directly to hospital administration, health care administration, health care planning, and courses in related areas. Students are graded in each course and must maintain a grade point average of 2.50 (based on A = 4, B = 3, C = 2, and D = 1).

Class lectures and seminars are supplemented throughout the year by field trips to hospitals and other health care organizations in the Twin Cities and the state. Practical administrative experience is provided during the winter quarter when students are assigned to various hospitals and other health care organizations in Minneapolis and St. Paul to work on an existing management problem.

In the spring quarter, students are encouraged to attend the convention of the Upper Midwest Regional Hospital Conference which is held each year in either Minneapolis or St. Paul. The convention gives them an opportunity to meet and associate with a large number of administrators and other hospital personnel from a wide area. In addition, the convention's exhibit hall permits them to see many of the new developments in hospital equipment and supplies. Students also attend the annual week-long in-service Institute for Hospital Administrators which is held in February and is sponsored jointly by the Program in Hospital Administration and the Minnesota Hospital Association.

Because the regional office of the coordinator of the American Hospital Association's Continuation Education Center is located at the Program in Hospital Administration, its activities are available for review and understanding by the students.

### *Residency Year*

The faculty of the Master's program in hospital administration guides and assists students in obtaining administrative residencies in approved hospitals and other health care institutions. The administrators of these institutions hold University faculty appointments as clinical preceptors on a continuing basis and residents are placed with them each year.

Content programs of instruction have been developed by this joint faculty to meet the objectives of the residency period and to afford full opportunity for tutorial methods of teaching.

The resident's schedule during this period of his education will vary with the individual hospital or other health care organization. Under the pattern most commonly employed, the resident begins with a rotation through the different hospital departments. Such a rotation gives the resident an opportunity to observe and participate in the work of the various departments. It allows him to gain an insight into the role these departments play in the total hospital program, their organization, standards of performance, methods of control, and major problems of operation.

Following the rotation period, the resident normally functions as a member of the administrative staff. Under the close supervision of the preceptor, he is given assignments which carry some independent responsibility and is assigned to work on specific management problems.

Twelve credit hours are granted for satisfactory completion of the residency period, including the submission of an acceptable thesis.

**Residency Thesis** — During the residency period, each student is required to prepare and submit a thesis. This thesis is a research project for the purpose of gaining an appreciation and understanding of research design and methodology. The subject matter is selected by the resident but must be approved by both the preceptor and a member of the academic faculty who serves as his major adviser.

**Faculty Visits** — Normally, a faculty member visits each resident and preceptor during the year. Such visits enable the faculty to determine the resident's progress, to evaluate the various residency programs, and to assist in coordinating the academic and residency periods.

**Student Evaluation Reports** — The residents are formally evaluated by their preceptors on the skills they should be developing in the residency period and on their personal characteristics. The preceptors submit these evaluations periodically to the program after discussing them with the residents.

**Residents' Institutes** — In June, just preceding graduation, students return to the University campus for a week of lectures, seminars, and discussions on hospital operation and administration, medical care, planning, provision and delivery of total health care services and related subjects. This provides an academic ending to the students' formal education and, in addition, it gives the students an opportunity to review and evaluate their residency experience. By sharing this experience with others, it also gives the students an opportunity to gain an insight into varying types of hospital operation and methods of administration and control, planning skills, and for a nationwide focus on current issues and problems in the planning, provision, and delivery of health care services in the United States.

**Preceptor's Meetings** — A successful administrative residency depends, in large measure, upon the role assumed by the clinical preceptor and his relationship to the student. The clinical preceptors and the academic faculty meet annually at the University in joint session to evaluate the residency period, to develop a mutual understanding of the objectives and content of the program, and to achieve coordination between the academic and residency years.

**Residency Stipends** — The stipends received by students during this period vary from one residency setting to another. Stipends help to defray living and other expenses during that period. In addition, full or partial maintenance is granted residents at some residencies.

### *Research Program*

There is a growing emphasis on research in the hospital planning and health care field. Students in the Program in Hospital Administration have an opportunity to develop skills in this area during the academic and residency years. A full-time research staff was added to the faculty in 1955, and currently

## *Program in Hospital Administration*

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research is being carried out at both the faculty and student levels. Research projects are principally supported by grants from governmental and foundation sources.

### *Summary of Master's Degree Program\*\**

#### *Academic Period — Fall Quarter*

- PubH 100A — Elements of Public Health (3)
- PubH 160 — Principles of Administration in Hospitals (6)
- PubH 162 — Principles of Organization and Management of Hospitals (3)
- PubH 168 — Orientation to Medical Sciences (3)
- Spch 106A — Public Speaking and Conference Leadership (3)
- Soc 152 — Sociology of Medicine and Medical Institutions (3)

**Total Fall Quarter Credits (21)**

#### *Academic Period — Winter Quarter*

- PubH 100B — Elements of Public Health, Group Work (2)
- PubH 106 — Public Health Administration (3)
- PubH 108 — Introduction to Biostatistics and Statistical Decision (3)
- PubH 161 — History and Development of Hospitals (3)
- PubH 163 — Principles of Organization and Management of Hospitals (6)
- PubH 166 — Hospital Clerkship (5)

**Total Winter Quarter Credits (22)**

#### *Academic Period — Spring Quarter*

- PubH 100C — Elements of Public Health, Group Work (1)
- PubH 107A — Maternal and Child Health (1)
- PubH 109 — Institutional Sanitation (3)
- PubH 125A — Public Health Education (1)
- PubH 132 — Mental Health (1)
- PubH 141 — Social, Economic, and Political Aspects of Medical Care (3)
- PubH 164A — Principles of Organization and Management of Hospitals (4)
- PubH 167 — Management Problems in Hospital Administration (6)
- PubH 170A — Public Health Nursing (1)
- PubH 210 — Public Health Seminar (3 qtrs — no credit)
- 3 credits in Quantitative Approach to Administrative Problems

**Total Spring Quarter Credits (24)**

#### *Academic Period — First Term Summer Session*

- PubH 164B — Research in Hospital Administration (2)
- PubH 120A — Biomedical Computing (3)

**Total Summer Session Credits (8)**

**Total Credits for Academic Period (75)**

#### *Residency Period*

- PubH 169 — Administrative Residency (12)

**Total Credits Residency Period (12)**

**Grand Total (87)**

### *Student Awards*

Five awards are given each year. The James A. Hamilton Award is given to the member of the graduating class who shows the "greatest promise of Achievement" in the field of hospital administration. The Sabra M. Hamilton Award is presented to the graduating student who writes the "best research thesis." The Class of 1954 Award is given to the student who submits the "best hospital clerkship paper" during the academic year. The American Surgical Trade Association Awards are presented for outstanding scholarship in the

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\*\* In the above summary, credits are shown in parentheses. The abbreviated prefixes are: PubH, Public Health; Spch, Speech; Soc, Sociology.

academic period — one for the highest scholastic average in the administration courses and one for the highest scholastic average in the public health courses.

## **Doctoral Program**

Major Advisers — Bright M. Dornblaser, James W. Stephan, Theodor J. Litman, Vernon E. Weckwerth

### *Objectives*

The objective of the Doctoral program is to develop teachers and researchers in the field of health care rather than provide advanced training in hospital management or operations per se. Thus the curriculum is oriented more toward understanding and dealing with the external factors that effect the hospital and related health services than internal operation.

The academic program normally takes 3 years to complete although this may take somewhat longer depending upon the individual and the kind of program he pursues. In addition to a number of courses in our own division, students are free to elect work offered in various other departments throughout the University. In the past, these have included sociology, psychology, business administration, industrial relations, public administration, and statistics. Upon successful completion of his preliminary examination, the student may then embark on his dissertation under the guidance of a senior member of the faculty. On the whole, employment opportunities upon completion of the degree seem extremely promising.

### *Requirements for Admission*

1. Bachelor's degree from an acceptable institution, preferably with breadth in the social sciences, mathematics, and administration.
2. A Master's degree, with a major in hospital administration, is a helpful first step in acquiring the Ph.D.
3. Evidence of marked academic ability and potential for independent work and research.
4. Letter indicating applicant's reasons for seeking advanced education.
5. Names of three references attesting to scholarship, personality, and fitness for a teaching or research career.
6. Acceptable score on the Miller Analogies Test, graduate level.
7. A \$10 credentials examination fee which is nonrefundable (checks to be made payable to the University of Minnesota).

Arrangements may be made to take the MAT examination at appropriate test centers located at many colleges and universities throughout the United States.

Students lacking basic public health courses will be required to complete such courses concurrently with their doctoral program. Graduate work satisfactorily completed prior to entering the doctoral program may be applied where appropriate and in accordance with the regulations of the Graduate School.

## *Program in Hospital Administration*

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### *Plan of Instruction*

The program emphasizes breadth of learning in contrast to technical development. The student will be given opportunity (1) to understand human society and the dynamic relationships between social behavior and health; (2) to comprehend the economic, political, psychological, and social aspects of health services; (3) to extend his knowledge of the planning, organization, and development of health services; (4) to acquire knowledge of research and skill in its application to the hospital and other health services; and (5) to obtain experience and guidance in teaching hospital and health care administration.

Each student's program of study will be arranged individually with the guidance of his advisers and in accordance with Graduate School requirements. Each program will cover subject matter of the major field in the following three areas: (1) organization and administration of hospitals and related health services; (2) social, psychological, economic, and political aspects of health care services; and (3) methodology of hospital and related health services research. In addition, the student will achieve competency in social science fields particularly related to the major field. Especially recommended are economics, political science, psychology, and sociology. With the approval of his advisers, the student will complete one of the following requirements: (1) at least 24 credits in a coherent program of courses selected from the related social science fields; (2) all of the minor field requirements in one of the related social science fields or in two fields as a split minor in social science; or (3) a second major in one of the related social science fields. All candidates will also complete a minimum of 9 credits in statistics courses numbered 100 or higher.

### *Language*

A reading knowledge of two foreign languages or of one foreign language with the option of a research technique or a collateral field of knowledge is required.

### *Thesis*

A dissertation dealing with a significant problem in the health care field is required.



## DESCRIPTION OF COURSES

**Course Numbering** — A course is designated by a prefix (departmental abbreviation) and number, and sometimes a letter. It will have the same number regardless of the quarter in which it is offered.

**Symbols** — The following symbols are used throughout the course descriptions and will carry no page footnotes:

§ No credit is given if credit has been received for equivalent course listed after section mark.

# A sharp sign means "consent of instructor."

**Abbreviations** — The following abbreviations are used throughout the course descriptions:

Ar	To be arranged or assigned	Prereq	Prerequisite
Avg	Average	Qtr	Quarter
Cr	Credit(s)		

A parenthetical statement after the description of each course gives the following information: the number of credits the course carries, and the courses or special class standing prerequisite to it.

**100A. Elements of Public Health I.** Occurrence and prevention of communicable, degenerative, and industrial diseases; protection of food, water, and milk; maternal and child health. (3 cr; prereq 3, or 50, and a course in microbiology and #) G Anderson, Thomson, Schuman

**100B. Elements of Public Health II.** Group work in evaluation and solution of representative community health problems. (2 cr; prereq 100A)

**100C. Elements of Public Health III.** Continuation of group work in evaluation and solution of representative community health problems. (1 cr; prereq 100B)

**106. Public Health Administration.** Structure, basic functions, and activities of public health agencies. (3 cr; prereq 100A) G Anderson

**Spch 106A. Public Speaking and Conference Leadership.** The management of basic communication problems in administration. Discussion and exercises in communication problems, informational speaking, persuasive speaking, conference forms, and conference leadership. (3 cr) Shapiro

**107A. Maternal and Child Health Program.** Community programs for major maternal and child health problems. (1 cr, §107; prereq hospital administration students and #) Bridge

**108. Introduction to Biostatistics and Statistical Decision.** Variation, frequency distribution; probability; significance tests; estimation; trends; data handling; simple operations research applications; statistical approach to rational administrative decision making. Lectures and laboratory exercises. (3 cr; prereq #) Weckwerth

**109. Institutional Environmental Health.** Sanitation and safety practices in hospitals and other institutions. (3 cr; prereq hospital administration students or #, 100A) Michaelsen and staff

**120A. Biomedical Computing.** Introduction to digital computers and FORTRAN programming, with applications in biology and medicine; information capture,

## *Program in Hospital Administration*

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- storage, retrieval, and display; statistical analysis packages; simulation; analog signal processing; nonlinear models; hospital information systems. (3 cr per qtr; prereq Math 10 or #) Briese, Pogue
- 125A. Health Education in Hospitals.** Guiding principles; purposes and scope; methods and materials; health education planning, with special emphasis on hospitals. (1 cr; prereq hospital administration students) Craig, Ellis
- 132. Mental Health Program.** Community program for promotion of mental health and care of mentally ill persons. (1 cr; prereq 106 or #) Williams
- 141. Social and Economic Aspects of Medical Care.** Social and economic forces affecting administration and financing of medical care; sickness insurance, group hospitalization; concern of government in provision of medical care. (3 cr; prereq #) Litman and staff
- 152. Sociology of Medicine and Medical Institutions.** Social factors associated with incidence of physical and mental illness and its treatment. Social organization of medical institutions. Public needs and medical services. Sociology of aging, and social problems of the aged. (3 cr) Litman
- 160. Principles of Administration in Hospitals.** Lectures, seminars, and field trips in hospital administrative principles; top management and board of trustees, policy formation, human relations. (6 cr) Dornblaser, Sweetland, and staff
- 161. History and Development of Hospitals.** Functions; ownership and control; promoting and building new hospitals; integrated service; national associations and foundations. (3 cr) Brodahl, Stephan, and staff
- 162-163. Principles of Organization and Management of Hospitals.** Departmental structures and functions; organizational principles and practice. (3 cr for 162, 6 cr for 163) Dornblaser, Stephan, Phin, and staff
- 164. Principles of Organization and Management of Hospitals.** Personnel department; legal liability; fiscal management, hospital insurance, research in administration. (6 cr; prereq 162, 163) Brodahl, Stephan, Countryman, Litman, Weckwerth
- 166. Hospital Clerkship.** Assignment to local hospital for survey and solution of special problem. (5 cr) Bieter, Metzner, Sweetland
- 167. Management Problems in Hospital Administration.** Assignment and solution of specific managerial problems. (6 cr; prereq 162, 163, ¶164) Dornblaser, Sweetland
- 168. Orientation to Medical Sciences.** Medical terminology, applied anatomy, and physiology. (3 cr; prereq #) Thomson
- 169. Administrative Residency.** Field work of 1 calendar year's duration in approved hospital; weighted rotation through departments, solution of special problems, and preparation of an acceptable formal report. (Cr ar) Dornblaser, staff, and clinical preceptors
- 170A. Administration of Public Health Nursing.** Scope; relationship to other aspects of public health. (1 cr, §170; prereq #) Sparrow, Sime
- 210. Seminar: Public Health.** Staff
- 261-262. Alternative Patterns for Meeting Health Care Needs.** Future role of hospitals and related health services in light of patient needs and community services. (3 cr per qtr; prereq #) Litman and staff
- 264. Seminar: Medical Care Patterns Abroad.** (3 cr; prereq #) Litman

July 31, 1968

UNIVERSITY  
MINNESOTA  
BULLETIN

1968-70



**SCHOOL OF DENTISTRY**

# UNIVERSITY OF MINNESOTA

FOUNDED IN THE FAITH THAT MEN ARE ENNOBLED BY UNDERSTANDING,  
DEDICATED TO THE ADVANCEMENT OF LEARNING AND THE SEARCH FOR TRUTH,  
DEVOTED TO THE INSTRUCTION OF YOUTH AND THE WELFARE OF THE STATE.

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## SCHOOL OF DENTISTRY

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Mellor R. Holland, D.D.S., M.S.D., Assistant Dean and Professor

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July 31, 1968

### UNIVERSITY OF MINNESOTA BULLETIN

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The contents of this bulletin and of other University bulletins, publications or announcements are subject to change.

# School of Dentistry

## GENERAL INFORMATION

### Historical Statement

The University of Minnesota was chartered in 1851, 7 years before the Territory of Minnesota became a state. The University began as a two-story preparatory school in Sioux Indian land on the banks of the Mississippi. It was beset by financial crises during the early years and struggled to gain faculty, students, and permanent buildings.

While prospective students marched off to join the Civil War cause, loyal University supporters were erecting the first permanent University building, Old Main. The University, closed during the Civil War, reopened in 1869 with William Watts Folwell as president. A year earlier, the University was allotted public land under the Morrill Act in proportion to its representation in Congress. John Sargent Pillsbury, as University Regent, State Senator, and later Governor, led the University out of its financial problems and set it on the road to greatness.

In 1888, the University took over the Minnesota College Hospital, a private school of medicine which since 1883 had been giving courses of instruction in dentistry and medicine. The College of Dentistry was one of three colleges included in the Department of Medicine established by the University in 1888. The College of Dentistry, organized as a separate college in 1892, changed its name to the School of Dentistry in 1932.

The Board of Regents in 1968 changed the University's Medical Center title to the University of Minnesota Health Sciences Center and recognized a Council of Health Sciences Deans and Directors as an advisory body for programs in the health sciences. The council's members represent the College of Pharmacy, College of Veterinary Medicine, Medical School, School of Dentistry, School of Nursing, School of Public Health, and the University Hospitals.

### Facilities

The School of Dentistry, housed in five different buildings since its beginning, is now located in Owre Hall just south of Washington Avenue between Church Street and Union Street Southeast, on the Minneapolis Campus of the University of Minnesota. In recent years, a new addition and extensive remodeling of Owre Hall have provided expanded clinical, laboratory, and research facilities.

The dental school is part of a great university health center. The school is adjacent to the University of Minnesota Hospitals and the teaching and research laboratories of the basic medical sciences. The center and associated teaching hospitals provide the students with excellent facilities for the study of dentistry and allied dental fields.

These facilities and the highly specialized teaching staff in the dental school, the University and other teaching hospitals, the basic medical science

## **School of Dentistry**

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departments, and departments of other academic disciplines enable the students to study dentistry and allied fields under very favorable conditions. Instruction is given by lecture, laboratory courses, seminars, closed circuit television, demonstrations, and clinical practice in the dental clinics and hospitals.

The students enjoy all the advantages which come from participation in the activities of a university composed of academic, scientific, and professional colleges. Since the dental school is on the Minneapolis Campus of the University, cultural and recreational opportunities are available for the students. The central library and the biomedical library are conveniently located near Owre Hall. Dormitories for men and women are just a short distance from the dental school.

### **Administration**

The dean is the chief administrator of the school. The Faculty Executive Committee, composed of divisional chairmen and other full-time faculty people, is the legislative body of the school and is advisory to the dean.

### **Teaching, Research, and Service Objectives**

It is the primary objective of this School of Dentistry to devote all its resources and to dedicate its entire efforts toward total and continuing advancement of all existing and all potential responsibilities of the profession of dentistry. These efforts are directed toward our responsibilities in teaching, research, and service. The objectives are:

#### **TEACHING**

1. To prepare undergraduates for high quality dental practice through the acquisition of skills, knowledge, and attitudes essential to the practice of dentistry.
2. To conduct educational programs strongly based on scientific and biological principles which give the students an understanding of the patient's total health and teach them to plan, execute, and direct oral health treatment as part of general health care with emphasis on preventive measures.
3. To inculcate in the student a community-conscious attitude, an understanding of the sociological and psychological aspects of health and disease, and an appreciation for the obligations of a professional person in general and a member of a health profession in particular.
4. To provide the student with experience in working with auxiliary personnel and practicing team dentistry.
5. To train dental auxiliary personnel to assist the practicing dentist and to perform clinical duties consistent with their skills and training.
6. To provide graduate level training for the preparation of individuals interested in careers in research, academic dentistry, and specialty practice.
7. To teach undergraduate and graduate students the essentials of practicing dentistry in hospitals and community health centers.
8. To stimulate the students to do research, to think critically about the information available, and to understand public health needs and preventive dentistry.
9. To utilize the most advanced teaching methods in a curriculum subject to constant review.
10. To promote meaningful programs of continuing education for dental practitioners and related health professionals.

11. To integrate the teaching programs of the school with those of the other health sciences and the community.
12. To provide other health science workers and the University community appropriate insights into the subject of oral health.
13. To inform and influence society and our community about the benefits of good oral health.

### RESEARCH

1. To advance the knowledge of oral health with an active, expanding fundamental and applied research program.
2. To investigate various educational methods and develop new techniques and measurements capable of evaluating educational programs to determine the need for change and improvement.
3. To investigate community oral health problems, causes of oral disease, and elements of preventive measures.
4. To conduct fundamental biological research not necessarily confined to oral structures.
5. To develop an environment conducive to full and open inquiry into all facets of health, disease, and education applicable to the role of dentistry in total health care.

### SERVICE

1. To provide exemplary care for patients treated in the clinics.
2. To provide prompt and efficient consultative service to dental practitioners, medical practitioners, and other health science professionals.
3. To promote and cooperate with communities on oral health service projects consistent with the mission of the dental school.
4. To elevate the standards of dental practice in the community.
5. To demonstrate an attitude of social responsibility and sensitivity by the way in which our service programs are undertaken and carried out.
6. To share and disseminate meaningful oral health knowledge with dental practitioners, other health science workers, and the public.

## Programs

The School of Dentistry conducts extensive programs in education, research, and service. It offers a 4-year program in dentistry leading to the degree of doctor of dental surgery (D.D.S.). This dental school promotes a strong graduate activity at the M.S.D. and Ph.D. levels and sponsors auxiliary personnel programs in dental hygiene and dental assisting. The school maintains facilities for an active research effort and provides service to the public and the profession of dentistry through a variety of activities.

## Accreditation

The undergraduate programs in dentistry, dental hygiene, and dental assisting are fully approved by the Council on Dental Education of the American Dental Association. The advanced specialty training programs in endodontics, oral surgery, orthodontics, pedodontics, and prosthodontics are also approved by the council. The School of Dentistry is a full member of the American Association of Dental Schools.

## FOUR-YEAR PROGRAM LEADING TO DEGREE OF DOCTOR OF DENTAL SURGERY

### Requirements for Admission

**General**— The 4-year program in dentistry for the D.D.S. degree is open to men and women. A freshman class is admitted once a year, in the fall, although students planning to enter dental school can begin their liberal arts education at any time.

While high school credentials are not examined as part of the admission evaluation, high school students anticipating dental careers are urged to take a sound academic program in high school to prepare properly for the liberal arts and dental educational programs. The schedule of classes should include mathematics, chemistry, physics, biology, foreign languages, English, and social studies.

The Admissions Committee favorably considers mature, motivated young people who are of sound moral character and who possess such attributes as honesty, stability, common sense, industry, cooperativeness, and leadership ability.

A minimum of 90 quarter credits (60 semester credits) from an accredited liberal arts college is required but at least 3 years of liberal arts study is preferred. One semester credit is equivalent to 1½ quarter credits. While acceptance is based primarily on quality of performance, applicants with a broad liberal education are looked on with favor.

The School of Dentistry believes that all of its students should hold in common the search for a liberal education. In the broadest sense a liberal education is one which frees us from the limitations placed by ignorance on our powers of judgment and choice. More specifically, a liberal education asks of us that we seek control over the general intellectual instruments for acquiring and communicating knowledge, primarily the instruments of language and number; that we seek understanding of the ways in which scientists contribute to man's knowledge of himself and his environment; that we seek historical and philosophic perspective on the nature of our own lives and the world in which we live; and that we seek appreciation of the creative insights into life and nature provided by literature and the arts. To help students achieve the goals of liberal education, the School of Dentistry expects each student to distribute some part of his pre dental liberal arts course work in areas of study other than those related to the biological and physical sciences. Pre dental students are urged to plan their liberal arts education to at least satisfy the distribution requirements listed in the section explaining the B.S. degree in dentistry on page 13 of this bulletin.

Quality credits may not be used to decrease the minimum requirement of 90 credits. The minimum scholastic average which may be considered is C, but acceptance is on a competitive basis and an average well above C is usually necessary to achieve admission.

The required courses and minimum credits accepted are given below. The sciences must include both lecture and laboratory instruction. Exemptions and advanced courses with less credits will be recognized, but transcripts must clearly identify these and individual judgments will be made. Courses in



biology, chemistry, and physics may be considered outdated if taken more than 5 years prior to time of application. Only under unusual circumstances, will P credits on a P-N (pass-no credit) basis be accepted for required courses. It is expected that applicants will not exceed the following number of P credits in elective courses: 6 credits for 2-year students, 15 credits for 3-year students and 25 credits for 4-year students.

1. English — 12 quarter credits. If the basic English course is less than 12 quarter credits, additional credits must be completed in composition, literature, speech, or etymology to satisfy the minimum requirement of 12 quarter credits.
2. General Biology — 10 quarter credits. General zoology alone is acceptable but not preferred. If the general biology course is less than 10 credits, additional credits can be taken in other biology or zoology courses.
3. Physics — 12 quarter credits. Introductory type course is discouraged.
4. General Principles of Chemistry — 12 quarter credits.
5. Organic Chemistry — 8 quarter credits. The course content must contain both the aliphatic and aromatic series. One-semester courses are generally not of sufficient credits or depth to be acceptable.
6. Mathematics — Beginning for 1970 admission, applicants are asked to demonstrate by college validation or college credit a background in mathematics at least through college algebra.

The elective courses should be selected to give the student as broad and liberal an education as possible within the limits of time available. A proper distribution of courses in the following categories of knowledge is recommended: (1) Communication, language, symbolic systems; (2) Physical and biological sciences; (3) Man and society; (4) Artistic expression.

Students are expected to select the following preferred electives if at all feasible: mathematics (at least to the level of college algebra — see item 6 under required courses), psychology, speech, comparative anatomy, and a foreign language. Additional electives can be chosen from at least these subjects: analytical chemistry, anthropology, basic drawing, classics, economics, etymology, genetics, history, humanities, logic, political science, and sociology.

A maximum of 5 quarter credits in ROTC courses and 4½ quarter credits in religion will be accepted as part of the 90 minimum quarter credits. However, credits in physical education, human anatomy, physiology, histology, and microbiology are not acceptable as part of the 90 quarter credits required for admission. Courses in the human biological sciences are not recommended as part of the student's liberal arts preparation since they will be taken in dental school. However, credits in these courses will be accepted if in addition to the minimum of 90 quarter credits as defined above.

If the student anticipates the possibility of taking graduate study following the earning of his D.D.S. degree, it is suggested that he prepare himself during his pre dental education by earning additional credits in higher mathematics and the sciences.

At the University of Minnesota, the requirements for admission to the School of Dentistry are met by the following course of study, provided algebra and plane geometry were taken previously in high school:

1. Engl 1-2-3 (9 qtr cr — additional credits required to meet 12 qtr cr minimum); or Comm 1-2-3 (12 qtr cr)
2. Biol 1-2 (10 qtr cr)

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3. GeCh 4-5, 6 (14 qtr cr)
4. OrCh 61-62 (10 qtr cr)
5. Phys 1-2-3 and Phys 1A-2A-3A (12 qtr cr) or Phys 4-5-6 (15 qtr cr). Refer to *Class Schedule* to determine prerequisites for Phys 4-5-6.
6. Elective courses should include at least 20 credits in liberal arts subjects as listed above, and it is recommended that additional electives be selected from the following courses: Math 10A, 15, 40A; Psy 1 and 2; Spch 5; Zool 122 and 124; Gen 66 or Biol 70; Art 20; AnCh 57; and Clas 48.

**Testing Procedures** — All applicants are required to take the Dental Aptitude Test prepared by the American Dental Association. It is given three times a year, usually in October, January, and April in many testing centers in the United States and in several foreign countries. It is administered on the Minneapolis Campus of the University of Minnesota. A good time to take the test is during the first quarter of the sophomore year or as soon as the courses in biology and general chemistry have been completed.

Candidates are expected to take the test no later than October or January in the academic year prior to the year of requested enrollment. The April testing date is strongly discouraged for candidates desiring admission that fall. The results from this testing period are not available until June when most of the selections have already been made. Although the test generally measures aptitudes rather than special knowledge, some questions are specific in biology and general chemistry; thus a review of these subjects prior to taking the test is suggested, particularly if these courses have been taken more than 1 year before the testing date. It is advised that the applicant practice his carving ability on chalk. The size of the chalk for practicing is not important and any diameter available through most school supply stores is suitable. An application form and a brochure describing the test and testing centers and dates are available from the Office of Admissions and Records, 6 Morrill Hall, University of Minnesota, Minneapolis, Minnesota 55455. These materials can also be obtained by writing to the Division of Educational Measurements, American Dental Association, 211 East Chicago Avenue, Chicago, Illinois 60611.

In addition to the Dental Aptitude Test, applicants to the University of Minnesota School of Dentistry may be required to take supplementary tests of interest, ability, and personality. Specific information on these tests will be included with the application materials. After completed application papers are received and evaluated initially by the School of Dentistry, the applicant will be advised of dates and locations for these special tests. In common with the DAT, these special tests do not measure only the individual's factual knowledge but are designed to help the Admissions Committee learn more about the candidate's aptitudes and suitability for training in dentistry.

**Residence Requirements** — First choice is given to Minnesota residents, second choice to residents of neighboring states that do not have dental schools, and third choice to other nonresidents who have acceptable reasons for attending the University of Minnesota School of Dentistry. Nonresidents are accepted only if their scholarship has been outstanding and if their other qualifications indicate unusual promise for the study of dentistry and a career in science.

The Committee on Admissions will give preference to those applicants who have high scholastic records in college; who make satisfactory scores on the

dental aptitude test; who will have completed all course requirements by the end of the usual academic year previous to the desired date of admission; who, after having been granted a provisional acceptance, maintain an academic record of quality at least as good as the record at the time of the provisional acceptance; and who, in all other respects, give promise of becoming successful students and dentists of high standing.

**Personal Interview** — While a personal interview with each applicant is not required, candidates may be requested to appear for an interview at the discretion of the Admissions Committee. Students are encouraged to request an interview if they wish to discuss matters relative to their applications. It is suggested that students write or call for an appointment to assure that a faculty member will be available. The address is: Dean's Office, School of Dentistry, 136 Owre Hall, University of Minnesota, Minneapolis, Minnesota 55455. The telephone number is 373-3454 (area code 612).

**Recommendations** — Applicants are required to have two recommendation forms submitted. These forms should be completed by a college counselor, religious leader, or some other appropriate respected citizen who is closely familiar with the applicant. Recommendation forms are available from the Office of Admissions and Records and will be included with the application forms. As indicated on the application form, the candidate is requested to list one other name of a responsible person from whom the Admissions Committee could request additional reference information.

### **Application Procedures**

**General** — Application blanks and recommendation forms can be secured from the Office of Admissions and Records, 6 Morrill Hall, University of Minnesota, Minneapolis, Minnesota 55455. Applications should be filed between October 1 and April 15 of the academic year prior to the fall quarter the applicant desires to enroll in the School of Dentistry. While the closing date for application is April 15, early filing is encouraged since late application may be to the student's disadvantage. Early applications with complete data may be acted on in December.

All applicants are required to pay a \$10 credentials examination fee. This fee should accompany the application, and it should be in the form of a check, money order, or a bank draft made out to the University of Minnesota.

#### *Students Now Attending the University of Minnesota*

1. Fill out an Admission Application (typewritten or in ink) and bring it to the Office of Admissions and Records.
2. Apply for a change of college at the College Transfer Window in the Office of Admissions and Records.
3. If you have attended any other colleges or universities before entering the University of Minnesota, two copies of complete transcripts from each institution attended previously must be attached to your application and filed with it. Appearance on the University of Minnesota

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transcript of courses and credits transferred from other colleges and universities is *not* sufficient. After the request for transfer of college has been submitted, the Office of Admissions and Records will provide the School of Dentistry with the student's University of Minnesota transcripts as needed by the school.

### *Students Now Attending Other Colleges and Universities —*

1. Fill out an Admission Application (typewritten or in ink) as well as a Professional School Application Supplement.
2. Mail these applications, together with two official transcripts from each institution previously attended, to the Office of Admissions and Records, 6 Morrill Hall.
3. Following the completion of each semester's or quarter's course work two official transcripts of your grades must be forwarded to the Office of Admissions and Records, 6 Morrill Hall. This is a firm requirement. The applicant must take the responsibility to be certain this request is satisfied.

### **Fees**

Tuition fee (per quarter):	
Residents of Minnesota .....	\$168.00
Nonresidents .....	380.00
Credit hour tuition fee (unclassified students, auditors, and others carrying less than full work):	
Residents of Minnesota .....	14.00
Nonresidents .....	31.75
Record service fee (applicable only to students new to the University of Minnesota) .....	1.00
Incidental fee (per quarter) .....	37.00
(For privileges such as the Coffman Memorial Union, the Health Service, and the <i>Minnesota Daily</i> )	
Graduation fee:	
Large diploma .....	15.00
Small diploma .....	10.00
Special fees:	
Credential examination fee .....	10.00
Examination on subjects taken out of class. Such an examination may be taken only upon approval of the appropriate committee. (No fee for such examination on first entering the University, if taken within the first quarter) .....	
	5.00

**Privilege Fees** — The fee for the privilege of late registration or late payment of fees is \$3 through the first week of classes. During the second week the fee is \$5 and after the second week the fee is \$10.

### **Dental Equipment and Books**

Students are required to provide themselves with the instruments and textbooks specified in the Official List which will be mailed to new students

in July. Dental instruments and equipment are not offered for sale by the University but may be purchased from regular dealers in dental supplies. Books may be obtained from the Professional Colleges Bookstore in the Main Engineering Building or from other nearby bookstores.

The following are cost estimates for equipment, books, supplies, and laboratory fees for the 1968-69 school year.

	Instruments	Books	Materials and Gowns	Laboratory Fees	Totals
Freshman year .....	\$ 650	\$143	\$ 21	\$ 8	\$ 822
Sophomore year .....	878	166	94	6	1,144
Junior year .....	862	139	18	.....	1,019
Senior year .....	28	30	.....	.....	58
Totals .....	\$2,418	\$478	\$133	\$14	\$3,043

### Financial Aids

Financial aid is available from an increasing number of loan and scholarship funds. Academic achievement, professional promise, and financial need are required for eligibility of support from most of these funds. The only security for loans to students is the character of the applicant and his ability to perform satisfactorily in his courses. Most of the loans and scholarships are administered by the Bureau of Student Loans and Scholarships in consultation with the School of Dentistry. This bureau is located in 107 Armory, Minneapolis Campus.

### Loan Funds

The following major loan funds are available for undergraduate dental students. Other loans may be obtained through various private and public sources.

1. American Dental Trade Association — Junior and Senior Student Loan Fund.
2. Dr. Alfred Owre Loan Fund.
3. Health Professions Student Loan Fund sponsored by the Federal government.
4. Special Bank Fund for junior and senior students sponsored by the Minnesota State Dental Association.
5. United Student Aid Fund sponsored by commercial banks in consultation with the Bureau of Student Loans and Scholarships.
6. University of Minnesota Trust Fund — A general fund and many special funds provide financial aid for dental students through contributions by individuals, graduating classes, foundations, philanthropic groups, societies, and commercial firms. The special funds administered by the bureau for dentistry are as follows:

American Fund for Dental Education sponsored by the American Dental Association

Delta Sigma Delta Loan Fund

1936 Dental Memorial Fund

Dr. Ambert B. Hall Loan Fund sponsored by Dr. Oscar C. Nord

Duluth District Dental Society Auxiliary

International College of Dentists

Minneapolis District Dental Society Auxiliary

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Northwest District Dental Society Auxiliary  
School of Dentistry Loan Fund sponsored by students, alumni, and friends of  
the School of Dentistry  
Southeastern District Dental Society  
St. Paul District Dental Society Auxiliary  
W. K. Kellogg Foundation  
William S. Lindsley Dental School Loan Fund

### *Scholarships and Fellowships*

Scholarship funds are very limited but more awards are becoming available. Research fellowships are increasing in number.

Allan T. H. Bluhm Memorial Scholarship  
Dr. Walter Johnson Memorial Scholarship  
Duluth District Dental Society Auxiliary Scholarship  
Jack Brice Anderson Memorial Scholarship  
James and Alice O'Neill Scholarship  
Kramer Dental Studio Scholarship  
Postsophomore Ph.D. Fellowships sponsored by the United States Public Health  
Service  
School of Dentistry Scholarships sponsored by students, alumni, and friends of the  
School of Dentistry  
School of Dentistry Century Club Scholarships



*Undergraduate Dental Student in Research Fellowship Program*

Undergraduate Summer Research Fellowships sponsored by the United States Public Health Service, the Minnesota Dental Research Foundation, Inc., and other special funds

University of Minnesota Bookstore Scholarships

### *Special Awards and Honors*

Several special awards are available for the dental students for scholarly achievement and excellence in specific aspects of dental practice.

#### **Ability and Promise in Preclinical and Clinical Dentistry**

*Sponsors:*

Academy of General Dentistry  
American Academy of Oral Medicine  
American Academy of Gold Foil Operators  
American Academy of Oral Roentgenology  
American Association of Endodontists  
American Academy of Periodontology  
American Dental Society of Anesthesiology, Inc., Minnesota Component  
American Society of Dentistry for Children  
American Society of Periodontists  
C. V. Mosby Company Awards  
Minnesota Academy of Restorative Dentistry  
Minnesota Prosthodontic Society  
Minnesota Society of Oral Surgeons  
Minnesota Society of Orthodontists  
Minnesota Unit of American Society of Dentistry for Children  
Periodontics Award of Lactona Products Division

#### **Class of 1925 Research Award**

*Sponsor:* Contributors from the 1925 graduating class of the School of Dentistry

#### **William H. Crawford Undergraduate Research Award**

*Sponsor:* Minnesota Section of International Association for Dental Research

#### **Highest Ranking Senior Dental Student**

*Sponsor:* Alpha Omega Professional Dental Fraternity

#### **Two Highest Ranking Freshman, Sophomore, and Junior Dental Students**

*Sponsor:* Minneapolis District Dental Society Auxilliary

#### **Senior Student Showing Greatest Professional Development and Growth**

*Sponsor:* International College of Dentists

#### **Senior Essay Contest**

*Sponsor:* Block Drug Company

### *Self-Support and Grants-in-Aid*

The Student Employment Service assists students who find it necessary to earn part or all of their expenses. However, the program in dentistry is a full one, and students find it difficult to devote many hours a week to outside employment. Occasionally, a few research assistantships are available in the School of Dentistry.

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At the present time, the federal government provides, through the Health Professions Scholarship Fund, special grants-in-aid for students in extreme financial need.

### **Student Affairs**

Each fall the undergraduate students are requested to elect their class officers. These officers comprise the Student Council which serves as liaison between the student body and the faculty. The council convenes with a faculty adviser to discuss matters of mutual concern to the students and faculty.

Information on student affairs and faculty and staff activities appears in *The Dental Newsletter* published each quarter and distributed to students, faculty, and employees.

Four dental professional fraternities are active on the campus: Alpha Omega, Delta Sigma Delta, Psi Omega, and Xi Psi Phi. Matters common to these fraternities are considered in the Dental Inter-Fraternity Council which is duly recognized by the Dean of Students Office. A faculty member serves as adviser to the council.

For many years, the senior class has written and published an annual, *The Explorer*, which contains formal and candid pictures of the students, faculty, and staff and observations by the students of their 4 years in dental school.

The undergraduates are encouraged to become student members of the American Dental Association and Minnesota State Dental Association. For a nominal membership fee, the students receive the *Journal of the American Dental Association* and can participate in the insurance programs of the A.D.A. Membership in the Minnesota State Dental Association permits the student to participate in the loan and insurance programs of this association.

The National Board Dental Examinations are held twice a year on the campus. Part I of the examination is usually taken by the junior students in July while Part II is taken in April by the senior students. Virtually all of the students elect to take these written examinations recognized by the Licensing Boards in 44 states and the District of Columbia.

### **Honor Fraternity**

Omicron Kappa Upsilon, the national honor dental fraternity, is represented at Minnesota by the Beta Beta Chapter. Students are elected to membership in the senior year by the faculty on the basis of scholarship, character, and conduct. Not more than 12 per cent of the class is eligible.

### **Evaluation of Student Performance**

The class committees make quarterly evaluations of each student's academic achievement and personal conduct. Recommendations on the student's status and promotion are transmitted to the Faculty Executive Committee for action.

The students are expected to act as mature, professional persons. They are issued a set of guidelines for personal conduct and must abide by them.



Respect for school property is obviously required. Certain rules and regulations are prescribed.

Regular class attendance and punctuality are required and diligence in study is urged. The students must exercise their clinical responsibilities with discretion and display concern for the dignity and importance of the individual patient.

While every effort is made to aid the students in their studies and counsel them on their academic and personal problems, certain standards of performance have been established. Students cannot advance to the next academic year with major scholastic deficiencies. Dismissal from school can be for disciplinary as well as scholastic reasons.

The class committee chairman serves as the major adviser for the class. Counseling is available also through the Dean's Office in the School of Dentistry and the Student Counseling Bureau of the University and from faculty of the student's own choosing.

A special counseling program has been arranged for freshmen. Four or five students are assigned to a full-time or part-time faculty member who serves as an adviser during the entire year. This rather informal counseling system gives the new students a faculty member with whom they can discuss academic or personal matters on an unofficial basis.

### Bachelor of Science in Dentistry

The bachelor of science degree will be granted to all students in the School of Dentistry who have satisfactorily completed 2 years of pre dental liberal arts study and 2 years of dentistry. The degree is optional on the part of the student, but application for the degree should be made before the student completes the D.D.S. degree.

Students beginning their liberal arts study in the fall of 1966 and thereafter must satisfy the requirements of the all-University policy on liberal education to be eligible for the B.S. degree in dentistry. The purpose of this is to help all students to a broad and better understanding of self, nature, and society.

During the 2 or more years of liberal arts study, students must satisfy the following distribution requirements to be eligible for the B.S. degree.

- A. 9 credits in English composition with waiver accepted if advanced English course has less than 9 credits for composition or student is exempted from English.
- B. 48 additional credits distributed among the four categories of knowledge listed below, with not less than 9 credits exclusive of English composition in each.
  1. Communication, Language, Symbolic Systems  
Linguistics, logic, rhetoric, philosophical analysis, mathematics, and English and foreign language communication skills.
  2. The Physical and Biological Sciences  
The physical universe to include chemistry, physics, geology, natural science, astronomy, and geography. The biological universe with such courses as biology, zoology, genetics, anthropology, entomology, botany, and natural science.
  3. Man and Society  
The analysis of human behavior and institutions with courses such as social science, anthropology, economics, geography, political science, psychology, sociology, and speech. The development of civilization; historical

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and philosophical studies which could include humanities, classics, history, and philosophy.

#### 4. Artistic Expression

Art, music, architecture, speech and theatre arts, foreign or American literature, and languages.

### Combined Program in Arts and Dentistry Leading to the Degrees of Bachelor of Arts and Doctor of Dental Surgery

During the first 3 years of this program, the student pursues an academic course in the College of Liberal Arts, subject to regulations of that college and must secure at least 135 credits. Of the 135 credits, 45 must be earned in residence in the Arts College Upper Division and a minimum of 30 must be in Upper Division courses.

The Arts College credits must include a minor and 15 Upper Division credits outside the major and minor areas. Since the major area is dentistry, the 15 Upper Division elective credits must be in the humanities and social sciences. An average of C must be maintained in all University of Minnesota courses, in all transfer credits applicable to the B.A. degree, and in courses taken in residence in Upper Division.

The requirements for admission to the Upper Division (see *College of Liberal Arts Bulletin*) as well as work in chemistry, physics, and biology prescribed for admission to the School of Dentistry must be completed. Students transferring from other colleges must spend at least 1 year in the College of Liberal Arts, earning a minimum of 45 credits.

During the third year, the student elects courses in the Arts College, subject to the approval of the Scholastic Committee. The courses 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 count as the equivalent of the fourth year (45 credits of the Arts course). The student is then eligible for the B.A. degree, and he becomes eligible for the D.D.S. degree in 2 more years.

### Admission with Advanced Standing in Dentistry

Students from other dental colleges whose standards are fully equivalent to those of this institution may be received into advanced classes. However, space is limited and only students with strong records of academic achievement and potential can be considered. Such students must make formal application on the forms provided by the Office of Admissions and Records, and must submit transcripts covering both prerequisite and dental studies. Such credentials must show that the student has completed the required prerequisite subjects and has maintained the standard of scholarship required of students of this school.

Notebooks and other evidences of laboratory work must be presented. The amount of credit to be granted a student from another school is decided by the heads of the respective divisions in conference with the class committee. Subject credit (but not legal time credit) may be given for studies pursued in schools other than dental schools.

Students desiring advanced standing in dentistry should contact the School of Dentistry, 136 Owre Hall. The faculty has decided upon the following procedure which applies to any person desirous of entering the School of Dentistry with advanced standing:

1. Students applying for advanced standing must meet the equivalent of the prerequisite education required of our own students.
2. Advanced standing applicants are requested to complete the regular application form for admission to dentistry and a professional school application supplement. These forms are obtained from the Office of Admissions and Records, 6 Morrill Hall, University of Minnesota, Minneapolis, Minnesota 55455. The applicant is requested to indicate clearly on a note stapled to the applications that advanced standing admission is being requested.
3. They must present formal credentials for their entire educational record. There is a fee of \$10, payable in advance, to have these credentials evaluated.
4. They must take the University of Minnesota School of Dentistry placement tests which include written, oral, laboratory, and practical examinations in all of the basic medical sciences as well as in dental technology.
5. Applicants are required to take certain standard tests of personality characteristics and of aptitude for scientific and health science study. Specific information on these tests will be included with the application materials. After completed application papers and credentials are received and initially evaluated by the School of Dentistry, the applicant will be advised regarding dates and locations for these special tests.
6. There must be a personal interview.
7. Under no circumstances will advanced standing be granted beyond the beginning of the junior year.
8. Transfer students from other dental schools must provide a letter of recommendation from the dean of that school stating that the applicant is in good standing and is eligible for promotion to the next class.
9. Graduates of foreign dental schools must take the Science Achievement Examination administered by the American Dental Association.

### **Requirements for Graduation**

A candidate for the degree of doctor of dental surgery shall have satisfied the following requirements:

1. Completed all requirements for admission to the School of Dentistry.
2. Complied with the rules and regulations of the school.
3. Given evidence of sound moral character.
4. Completed honorably all requirements of the curriculum.

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5. Attended an accredited dental school for 4 academic years; the last 2 must be spent in this school.
6. Returned all equipment and supplies assigned to him for his use.
7. Attained a minimum of 2.00 or "C" average.
8. Discharged all financial obligations to the University.
9. Recommended by the faculty of the School of Dentistry for the degree.

### **Four-Year D.D.S. Curriculum**

Numerous changes have been made in our 4-year D.D.S. curriculum during the past 3 academic years. Additional revisions will be implemented in 1968-69. The purposes of these changes are to develop a more biological and scientific basis for the instruction, integrate more fully the basic medical sciences and clinical subjects, offer a course of study in human ecology, expand dental educational programs in hospitals, place considerably more emphasis on preventive dentistry, and provide more experience in team dentistry and comprehensive oral health care. While the curriculum contains a prescribed sequence of courses, increasing opportunities for electives and special programs are being developed for the undergraduate students. The outline of the 4-year program in dentistry, on page 20, is for the 1969-70 academic year and with the exception of the time scheduled for two courses represents the program for 1968-69.

### **CONTINUING EDUCATION PROGRAM**

The Department of Continuing Dental Education regularly offers a series of short courses in dentistry, dental hygiene, and dental assisting. These courses are intended to meet the needs of the profession for material not normally covered in the undergraduate curriculum and new developments in research and clinical procedures and concepts. Sessions usually are 3 days to 1 week in duration. In some courses clinical practice is included. Special brochures listing courses, dates, and costs are available to those requesting that their names be placed on the mailing list. Inquiries should be mailed to: Director, Department of Continuing Dental Education, School of Dentistry, University of Minnesota, Minneapolis, Minnesota 55455.

### **STUDENT SERVICES**

#### **Housing Facilities**

Out-of-town students may live in residence halls, private housing, or in fraternities or sororities. Not all freshmen or new students can expect to live in University residence halls since the number of student accommodations is limited. Dormitory application is made independently of application for admission. Private housing can be secured if University residence hall space is not available.

Information concerning residence halls may be obtained by writing to the Office of the Director of Housing, 180 Wesbrook Hall, University of Min-

nesota, Minneapolis, Minnesota 55455. This information as well as information about private housing and fraternities or sororities may also be obtained from the Student Housing Bureau, 209 Eddy Hall, University of Minnesota, Minneapolis, Minnesota 55455.

The Board of Regent's policy on discrimination in private housing is as follows:

The Regents of the University of Minnesota deplore discrimination on the basis of race, religion, or nationality. In line with this policy they declare that housing facilities should be available to students regardless of race, religion, or nationality. This policy presently governs in all housing facilities operated by the University. The Regents wish it to govern in all housing facilities offered to students by private owners.

The responsibility for administering this policy has been delegated to the Student Housing Bureau.

Living in a residence hall has many advantages for the student. The halls, located close to class buildings and to the student unions, offer comfortable living with well planned, healthful meals, served under the direction of a trained dietitian. Opportunities for counseling, health supervision, student government, social and athletic programs are provided. All residence halls are modern, fireproof brick buildings, constructed in accordance with the highest safety standards. The 1968-69 rates will range from \$311-\$346 per quarter for board and room payable in monthly installments. Many residents can earn part of their board and room by work in the residence halls; an early interview and application is recommended for students interested in this opportunity.

Application should be made early for accommodations in University residence halls. Write to: Director of Housing, 180 Westbrook Hall, or directly to the residence hall of your choice. Do not wait until registration time to apply. Applications will be accepted after January 1. Final acceptance by the University is not necessary before applying.

### *Halls for Women*

(Minneapolis Campus)

SANFORD HALL, accommodating undergraduate and graduate women, is located on University Avenue S.E. near the campus.

COMSTOCK HALL accommodates sophomore, junior, senior, and graduate women in large double and single rooms. This hall is situated along the Mississippi River close to the center of University life.

PIONEER COURT, accommodating undergraduate and graduate women, is located adjacent to Pioneer Hall for men and faces on East River Road. Women residents will share the common facilities of dining and recreation with men residing in Pioneer Hall.

### *Halls for Men*

(Minneapolis Campus)

PIONEER, CENTENNIAL, TERRITORIAL, and FRONTIER HALLS are located in a quadrangle on the edge of the campus near the East River

## *School of Dentistry*

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Road. These halls accommodate 2,360 men. Special houses for graduate students are available. Most unmarried dental students live in either Centennial or Pioneer Halls.

### *Housing for Married Students*

COMMONWEALTH TERRACE, new permanent apartments for married students and located on the St. Paul Campus, provides housing for 362 families in one- and two-bedroom units. The 1968-69 rates are \$80 and \$90 per month including utilities, unfurnished except for stove and refrigerator.

THATCHER HALL, for married graduate students only, is located at the edge of the St. Paul Campus. The building contains efficiency and one-bedroom furnished apartments at \$72.50, \$80, and \$90 per month (1968-69 rates) excluding electricity.

The demand for family housing is great and an early application is advisable. Applications for any of the locations should be sent to the Family Housing Office, 1295 Gibbs Avenue, St. Paul, Minnesota 55108.

### *Private Housing*

Vacancies in apartments, housekeeping units, and sleeping rooms are reported to the Student Housing Bureau, where students may get help with housing. Non-University housing is inspected to secure adequate housing standards for health, safety, and study conditions. Married students have found it desirable for one member of the family to come and live in temporary accommodations while looking for quarters for the entire family.

ANDREW HOUSE, a private residence hall, is located at 708 Fifth Street S.E., Minneapolis, Minnesota 55414. This newly decorated and remodeled building provides accommodations for 70 men and 70 women. Cafeteria dining, study, and recreation as well as parking facilities are provided. Opportunities for counseling, health supervision, and student government are available. The 1968-69 rates for single and double rooms range from \$290 to \$406 per quarter. Some residents can earn part of their board and room by work in the hall. Applications can be secured by writing to the manager of Andrew House or from the Student Housing Bureau.

Other rooms or apartments in private residences must be engaged "on the spot" — no reservations can be made before arrival on campus. Students should make arrangements for housing at an early date before classes begin to be assured of adequate quarters. Single students, under 21 years of age, must have approval of the Student Housing Bureau and their parents to live in an apartment.

Whatever lease arrangement you make, housing regulations provide that you must give notice according to rental pay period if you plan to move. Any change of address must be reported to the bureau. The bureau is the agency to consult in case of problems or difficulties about housing, or about your privileges, rights, and obligations. Use of bureau counsel in a dispute is likely to lead to a satisfactory conclusion.

### *Moving to Fraternities and Sororities*

Joining a fraternity or sorority does not excuse you from a rooming contract. If you plan to move to a fraternity or sorority house, you should make the move at the expiration of your contract or room commitment, or at such time as you are able to furnish a substitute to take over your contract. Information on rush week and fraternity and sorority pledging may be obtained from the Student Activities Bureau, 4 TNM, University of Minnesota, Minneapolis, Minnesota 55455.

### **University Health Service**

Medical care and health counseling are provided for all students through the University Health Service. No charge is made to students for general care or for consultations with a specialist on physical or mental health problems except for prolonged treatment of an elective nature for certain conditions. Medical care is given to a hospitalized student without charge, except for surgery. Students also receive specialized services, such as allergy testing and treatment, eye examinations, and laboratory services. Physical therapy and X-ray therapy are provided up to a limit of \$50 per quarter. Charges are made on a cost basis or less for dentistry, drugs, and glasses.

### **Libraries**

The University of Minnesota Library is one of the finest libraries in existence today and ranks as one of the 10 largest university research libraries in the United States. It includes over 2 million volumes as well as many periodicals and pamphlets, and in scope takes in every subject in the University curriculum. Its large, airy reading rooms provide an excellent place to study.

The Biomedical Library in Diehl Hall is located 1 block south of the School of Dentistry building. It includes extensive reference materials in the fundamental and clinical health sciences. Reference books, texts, and treatises of various kinds are kept on open shelves in this library. This section includes all available literature on dentistry in book and periodical form, and additional volumes are purchased as soon as they have been recommended by the Library Committee of the faculty in dentistry. This library, with over 185,000 volumes and 2,056 current periodical subscriptions, offers the student an excellent opportunity to secure a knowledge of the science and practice of dentistry and provides a quiet, convenient place to study.

Also, reference books and periodicals for the use of students are located in the Reading Room on the third floor in the School of Dentistry.

### **Coffman Memorial Union**

The Coffman Memorial Union places Minnesota in the forefront of American universities as to the recreational facilities which it offers to students. The cafeterias and lunchrooms, committee dining rooms, lounges for men and women, game rooms, bowling alleys, pool and billiard rooms, offices for student organizations, barber shop, beauty parlor, library, art room, and spacious ball-rooms are among the features that make the building the popular center of campus life.

*School of Dentistry*

**FOUR-YEAR PROGRAM IN DENTISTRY**

(1969-70)

	Fall Qtr		Winter Qtr		Spring Qtr		Total	
	Cr	Hrs	Cr	Hrs	Cr	Hrs	Cr	Hrs
<b>Freshman Year</b>								
Dent 50-51 — Oral Anatomy and Histology .....	4	80			3	40	7	120
Dent 52 — Biomaterials .....			2	20			2	20
Dent 52L — Biomaterials Laboratory .....			2	60			2	60
Dent 65 — Orientation Clinic .....	0	10					0	10
Dent 66 — Preventive Dentistry I .....	2	20					2	20
Dent 67 — Preventive Dentistry II .....			1	10			1	10
Dent 68 — Health Behavior .....					1	10	1	10
Dent 72 — Introduction to Occlusion .....					2	30	2	30
Dent 95 — Periodontics .....					2	30	2	30
Dent 176 — Public Communications .....			1	10			1	10
Anat 105 — Microscopic Anatomy .....	6	100					6	100
Anat 108-109 — Gross Anatomy for Dental Students .....			6	120	6	120	12	240
MdBc 104-105 — Medical Biochemistry for Dental Students .....	6	80	6	80			12	160
MicB 100 — Microbiology for Dental Students .....					6	90	6	90
	18	290	18	300	20	320	56	910
<b>Sophomore Year</b>								
Dent 60-61 — Prosthetics .....			3	70	2	40	5	110
Dent 69 — Group Behavior and Interaction .....					1	10	1	10
Dent 75-76-77 — Crown and Bridge .....	4	100	3	70	4	100	11	270
Dent 80 — Oral Diagnosis .....					1	10	1	10
Dent 81 — Roentgenology .....					2	20	2	20
Dent 83 — Genetics .....			1	10			1	10
Dent 85-86 — Operative Dentistry .....	1	10	1	10			2	20
Dent 85L-86L — Operative Dentistry Laboratory .....	3	90	3	90			6	180
Dent 87 — Dental Assistant Utilization .....					1	10	1	10
Dent 90 — Dental Anesthesiology .....					1	10	1	10
Dent 91 — Oral Surgery I .....					1	10	1	10
Dent 96 — Periodontics .....	2	30					2	30
Dent 100 — Development of Occlusion .....	4	60					4	60
Anat 110 — Human Neuroanatomy .....	3	40					3	40
Phsl 101 — Human Physiology .....			8	100			8	100
Path 100 — Pathology for Dental Students .....					8	130	8	130
	17	330	19	350	21	340	57	1020
<b>Junior Year</b>								
Dent 70 — Prosthetics .....	1	10					1	10
Dent 70L — Prosthetics Laboratory .....	2	60					2	60
Dent 105 — Orthodontics .....			2	20			2	20
Dent 106 — Hospital Dentistry .....					1	10	1	10
Dent 110-111 — Dental Prosthetics .....	1	10	1	10			2	20
Dent 110C-111C-112C — Dental Prosthetics Clinic .....	2	60	2	60	2	60	6	180
Dent 115 — Dental Literature Seminar .....					1	10	1	10
Dent 121 — Crown and Bridge .....			1	10			1	10
Dent 120C-121C-122C — Crown and Bridge Clinic .....	2	60	2	60	2	60	6	180
Dent 130 — Oral Diagnosis .....					2	20	2	20



## Dentistry

	Fall Qtr		Winter Qtr		Spring Qtr		Total	
	Cr	Hrs	Cr	Hrs	Cr	Hrs	Cr	Hrs
Dent 130C — Oral Diagnosis Clerkship††					1	30††	1	30
Dent 132C — Roentgenology Clerkship††					1	18††	1	18
Dent 142 — Operative Dentistry					1	10	1	10
Dent 140C-141C-142C — Operative Dentistry Clinic	3	90	3	90	3	90	9	270
Dent 144 — Endodontics	2	20					2	20
Dent 150-151 — Oral Surgery II			1	10	2	20	3	30
Dent 152C — Oral Surgery Clinic for Juniors††					0	15††	0	15
Dent 161-162 — Oral Pathology			3	40	3	40	6	80
Dent 170 — Pedodontics			1	10			1	10
Dent 171 — Pedodontics					1	10	1	10
Dent 171L — Pedodontics Laboratory					1	15	1	15
Dent 180-181-182 — Periodontics	1	10	1	10	1	10	3	30
Phcl 102 — General Pharmacology	7	90					7	90
Phcl 108 — Dental Therapeutics			1	10			1	10
<b>Senior Year</b>	<b>21</b>	<b>410</b>	<b>18</b>	<b>330</b>	<b>22</b>	<b>418</b>	<b>61</b>	<b>1158</b>
Dent 106C — Hospital Dentistry Clerkship**					1	30**	1	30
Dent 115C-116C-117C — Dental Prosthetics Clinic	2	60	2	60	2	60	6	180
Dent 125 — Crown and Bridge	1	10					1	10
Dent 125C-126C-127C — Crown and Bridge Clinic	2	60	2	60	2	60	6	180
Dent 127-128-129 — Restorative Dentistry Seminar**					3	30**	3	30
Dent 135 — Oral Medicine	2	20					2	20
Dent 137C — Oral Diagnosis Clinic**					1	30**	1	30
Dent 138 — Diagnostis Oral Roentgenology			1	10			1	10
Dent 145C-146C-147C — Clinical Operative Dentistry	2	60	3	90	2	60	7	210
Dent 149C — Treatment Planning Clinic**					1	30**	1	30
Dent 153 — Oral Surgery III	1	10					1	10
Dent 154 — Emergency Care			1	10			1	10
Dent 155C — Oral Surgery Clinic for Seniors**					2	60**	2	60
Dent 165 — Oral Biology			2	20			2	20
Dent 172 — Pediatric Dentistry	1	10					1	10
Dent 173C-174C-175C — Clinical Pediatric Dentistry	1	30	1	30	1	30	3	90
Dent 177 — Community Communications			2	20			2	20
Dent 186C — Periodontics Clinic††			4	120††			4	120
Dent 190 — Ecology Laboratory					1	ar	1	ar
Dent 195-198-199 — Dental Jurisprudence and Ethics	2	20	1	10	1	10	4	40
Dent 196-197 — Practice Administration			2	20	1	10	3	30
	<b>14</b>	<b>280</b>	<b>21</b>	<b>450</b>	<b>18</b>	<b>410</b>	<b>53</b>	<b>1140</b>

\*\* Students participate in these courses throughout the senior year with credit given and hours recorded at the end of spring quarter.

†† Students participate in this course throughout the junior and senior years with credit given and hours recorded at the end of winter quarter of the senior year.

‡‡ Students participate in these courses throughout the junior year with hours recorded and/or credit given at the end of the spring quarter.

## DESCRIPTION OF COURSES

### *DENTISTRY (Dent)*

#### Division of Crown and Bridge

*Professor*

Douglas H. Yock, D.D.S., M.S., *chairman*  
Hubert H. Serr, M.A., D.D.S.

*Clinical Associate Professor*

Lee C. Hermann, D.D.S.  
Robert R. Hoover, D.D.S.  
Charles B. McAllister, D.D.S.

*Assistant Professor*

Robert D. Jeronimus, D.D.S., M.S.  
Harold A. Pressman, D.D.S., M.S.

*Clinical Assistant Professor*

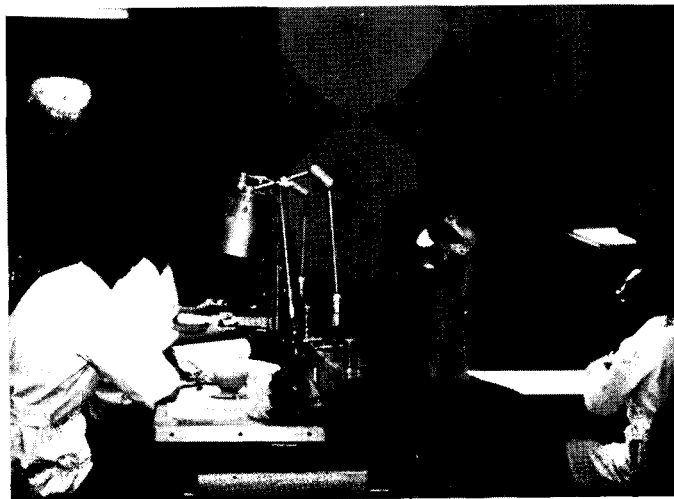
Rad M. Jevric, D.D.S.  
George D. MacGibbon, D.D.S.  
Eugene A. Moll, D.D.S.

*Clinical Instructor*

James F. Arndt, D.D.S.  
Stephen P. Broderson, D.D.S.  
Charles H. Colby, D.D.S.  
Kenneth D. Salo, D.D.S.  
Terrence L. Tri, D.D.S.  
Walter M. Zierman, D.D.S.

**75-76-77. Crown and Bridge Technic.** Lectures, demonstrations, and laboratory work, including exercises in casting, freehand and investment soldering, and the construction of a lower hygienic bridge, an upper posterior bridge, upper and lower anterior bridges, resin and porcelain crowns. An illustrated syllabus aids students in carrying out each project. Weekly lectures cover laboratory technics and fundamental principles. (4-3-4 cr; 270 lab and lect hrs) Serr and staff

**121. Crown and Bridge.** History of crown and bridge work, interpretations and objectives of the course, definitions and nomenclature, aims of the service,



*Television Demonstration in Crown and Bridge  
Technic to Entire Sophomore Class*



*Instruction in Crown and Bridge Clinic*

diagnosis, a consideration of types of abutment, retainers, and pontics. (1 cr; 10 lect hrs) Yock, Jeronimus

- 125. Crown and Bridge.** Ceramics and resins as related to aesthetics in clinical restorative dentistry. Fundamental principles and technics proven to be biologically and mechanically sound are reviewed. Review of fixed prosthodontic literature is required which is correlated with lectures, slides, movies, and seminar discussions. (1 cr; 10 lect hrs) Yock, Pressman
- 120C-121C-122C. Crown and Bridge Clinic.** Demonstrations and clinical practice designed to orient the student in the dental clinic. Instruction is given in the diagnosis, designing, and construction of the simpler cases. (2 cr per qtr; 180 clin hrs) Yock and staff
- 125C-126C-127C. Crown and Bridge Clinic.** An advanced clinical course. Demonstrations and clinical practice. Includes the use of porcelain and resins in fixed crown and bridge prosthodontics, together with instruction in the diagnosis, treatment planning, and fabrication of the more complicated cases emphasizing complete mouth rehabilitation. (2 cr per qtr; 180 clin hrs) Yock and staff
- 127. Seminar: Restorative Dentistry.** Correlated series of lectures on the clinical approach to crown and bridge, operative, periodontic, and prosthetic dentistry which overlap in technical procedures and biological concepts. (1 cr; 10 lect hrs) Yock, Folke, Jensen, Morstad

### Division of Human Ecology

*Associate Professor*

Lawrence H. Meskin, D.D.S., M.S.D.,  
M.P.H., Ph.D., *chairman*

Carl L. Bandt, D.D.S., M.S.D.  
John G. Geier, Ph.D.

## School of Dentistry

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### Assistant Professor

Richard H. Gordon, D.D.S., M.P.H.  
Joanna J. Samuels, Ed.D.

### Clinical Assistant Professor

Esther D. King, D.D.S.

### Professorial Lecturer

Irving R. Brand, LL.B.

### Instructor

Tommie L. Fitz, G.D.H., B.A.  
James B. Kenney, M.A.

Kurt J. King, D.D.S.

P. Jean Woodbury, M.P.H.

### Lecturer

William A. Jordan, D.D.S., M.P.H.

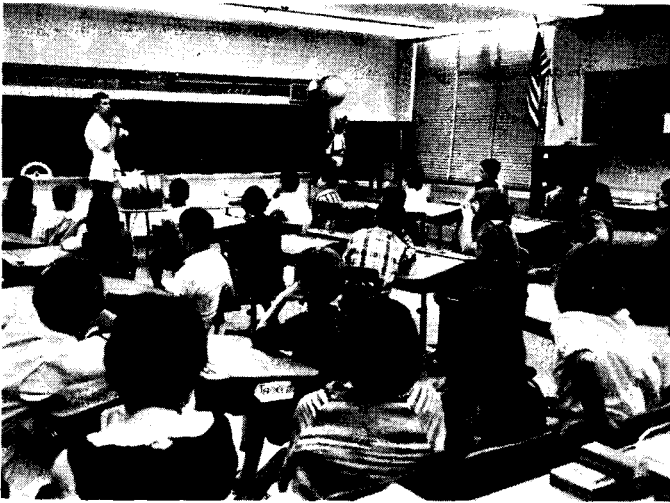
Harold A. Miller, Ph.D.

Shirley P. Schwarzrock, M.A.

Quentin T. Smith, M.A.

- 66. Preventive Dentistry I: Philosophy and Concepts.** Introduction to basic principles of preventive dentistry. The interrelationship of oral and general disease processes; the epidemiology of oral disease and implementation of preventive procedures on individual and community levels and recent changes in public health programs and their effect on dental practice will be stressed. (2 cr; 20 lect hrs) Meskin and staff
- 67. Preventive Dentistry II: Philosophy and Concepts.** Designed to acquaint the student with biostatistical principles used in the study of human disease. Emphasis will be given to the relationship between human variability and specific measures available for the community control of oral disease. (1 cr; 10 lect hrs) Meskin, Bandt, and staff
- 68. Health Behavior.** Designed to offer dental students the opportunity to gain insight into the health behavior of people in all socio-economic population groups. Through lecture, discussion, and group projects, students will gain ability to identify cultural, psychological, social, environmental, and individual determinants of health behavior, and skill in applying this knowledge to planning and designing educational programs. (1 cr; 10 lect hrs) Woodbury, Samuels
- 69. Group Behavior and Interaction.** Designed to improve the student's awareness, sensitivity, and perception of himself and others. Special emphasis is placed on the development of investigators and didactical skills which are employed in managing human resources. Opportunity is provided students to relate to, and learn about and from, each other through active participation in small group dynamic sessions. Group member participation will be evaluated through the unfolding process, the *in situ* elaboration of response with feedback reports. (1 cr; 10 lect hrs) Geier
- 115. Seminar: Dental Literature.** Utilizing the small group concept, students and staff will critically examine material presented in the dental literature for its design, content, and validity of conclusions. Emphasis will be placed on increasing the communication between dental investigators and practitioners. (1 cr; 10 sem hrs) Meskin and staff
- 176. Public Communication.** Designed to provide the student with methods of communication to large and small groups of people. Consists of guided instruction in skills associated with the formulation of ideas, arrangement of these ideas into a speech explicitly related to dentistry, support of the ideas with sound reasoning and evidence, and delivery of these with adaptations to specific audiences. (1cr; 10 lect hrs) Geier and staff

- 177. Community Communication.** This course has as its goal the training of the dental student as an effective communicator with patients, auxiliary personnel, community individuals and groups, physicians, and dentists. Specifically, through observation and participation the student will gain a greater appreciation for the skill to help him understand different types of communicative behavior. (2 cr; 20 lect hrs) Geier and staff
- 190. Ecology Laboratory.** Offered throughout the 4-year dental program; encompasses a wide range of field experiences which augment the didactic portion of the ecology program. Examples of such programs would include the dental resource speaking program, rural program, Cambridge program, and community health programs. (1 cr; hrs ar; addtl elective cr available) Staff



*Senior Student Teaching Dental Health  
to Elementary School Class*

- 195-198-199. Dental Jurisprudence and Ethics.** Judicial systems, administration, and proceedings; regulation of practice of dentistry; organization of practice; ethics; advertising; fee splitting, etc.; legal problems incident to purchasing and leasing real estate and purchasing personal property; accounting, taxation; wills and estate planning; contracts; malpractice; and insurance. (2-1-1 cr; 40 lect hrs) Brand
- 196-197. Practice Administration.** Philosophy of dental practice. Dental organizations. Practice: types, locations, finance planning, relations with outside agencies, forms and records, auxiliary personnel, fee determination and collection, insurance and taxes, treatment planning and counseling. Estate planning; investments and retirement planning. (2-1 cr; 30 lect and sem hrs) King and staff

## School of Dentistry

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### Division of Human Oral Genetics

#### Professor

Carl J. Witkop, D.D.S., M.S., *chairman*

#### Assistant Professor

Helen M. Cost, Ph.D.

#### Associate Professor

Burton L. Shapiro, D.D.S., M.S.D., Ph.D.  
C. Roberto Umana, M.D., Ph.D.

- 83. Genetics: An Introduction for Dental Students.** Lectures on chemical basis of heredity; cytogenetics, genetic ratios, methodology of human genetics, heredity and environment, and mutation and radiation. Genetic principles related to specific problems in dentistry. (1 cr; 10 hrs) Shapiro

### Division of Operative and Endodontics Dentistry

#### Professor

James R. Jensen, D.D.S., M.S.D., *chairman*  
Anna T. Hampel, D.D.S., M.S.D.  
John W. Wakely, D.D.S., M.S.

#### Instructor

Mirdza Kaufmanis, D.D.S.

#### Clinical Associate Professor

Herman T. Aeziman, D.D.S.  
William F. Braasch, D.D.S.  
Peter S. Gregus, D.D.S.  
Miles B. Hirschey, D.D.S.  
Kenji Horita, D.D.S.

#### Clinical Instructor

Anthony F. Antoncich, D.D.S.  
William C. Bender, D.D.S.  
Jerome A. Erickson, D.D.S.  
Chester I. Hegstrom, D.D.S.  
Raymond A. Hellickson, D.D.S.  
Donald G. McMillan, D.D.S.  
Thomas H. Rollin, D.D.S.  
John W. Thibodo, D.D.S.  
Carl B. Walden, D.D.S.  
Arne R. Westerback, D.D.S.  
George H. Winn, D.D.S.  
Alan L. Zabka, D.D.S.

#### Clinical Assistant Professor

Kenneth J. Buechele, D.D.S.  
Carl J. Olson, D.D.S., M.S.D.  
Anthony D. Romano, D.D.S.  
Ralph B. Werner, D.D.S.  
Edgar F. Ziegler, D.D.S.

- 85-86. Operative Dentistry.** Lectures on the nomenclature of operative dentistry, cavity design and classification, composition of materials, instrumentation and the fundamental basis of the technics employed. (1 cr per qtr; 20 lect hrs) Wakely and staff
- 85L-86L. Operative Dentistry Laboratory.** Instruction on the technics and principles of cavity preparation, manipulation of restorative materials, and instrumentation in operative dentistry in conjunction with the foregoing. Extracted teeth are sectioned, and also instruction in the technic of endodontics is employed. Use of broaches, reamers, and files is taught in the instrumentation of the canals. (3 cr per qtr; 180 lab hrs) Wakely and staff
- 142. Operative Dentistry.** Advanced clinical technics with special concepts and modifications in cavity design, biological considerations in the application of operative dentistry, technical information on the use of materials adjunctive to restorative technics and treatment planning. (1 cr; 10 lect hrs) Jensen and staff
- 140C-141C-142C. Operative Dentistry Clinic.** Preliminary indoctrination to clinical procedures, consisting of small group clinics demonstrating operative procedures on patients. During the remainder of junior year, students practice operative dentistry on assigned patients under the close supervision of staff. (3 cr per qtr; 270 clin hrs) Jensen and staff

144. **Endodontics.** Diagnosis and treatment of pulp and periapically involved teeth supplemented with demonstrations on clinical cases. (2 cr; 20 lect hrs) Jensen and staff
- 145C-146C-147C. **Clinical Operative Dentistry.** Upon evidence of satisfactory orientation into the operative clinic, the senior student engages in a clinical practice in which requirements for graduation are both qualitative and quantitative. Under direction of the staff, emphasis is placed upon efficiency and finesse in operating. Practical examinations are held during final week of each quarter to determine progress. (2-3-2 cr; 210 clin hrs) Jensen and staff
129. **Seminar: Restorative Dentistry.** Correlated series of lectures on the clinical approach to crown and bridge, operative, prosthetic, and periodontic dentistry which overlap in technical procedures and biological concepts. (1 cr; 10 lect hrs) Jensen, Folke, Morstad, Yock

**Division of Oral Diagnosis, Oral Medicine, and Oral Roentgenology**

*Professor*

George M. Yamane, D.D.S., Ph.D., *chairman*  
Robert L. Lang, D.D.S.

*Associate Professor*

Eugene E. Petersen, D.D.S., M.S.D.

*Clinical Associate Professor*

William O. Branstad, D.D.S.

*Clinical Assistant Professor*

Harold J. Pamuska, D.D.S., M.S.D.

*Instructor*

John S. Bacon, D.D.S.

*Clinical Instructor*

David M. Litman, D.D.S.

*Lecturer*

H. Dawes Miller, M.D.

*Research Fellow*

M. R. El-mostehy, F.D.S., R.C.S.

80. **Oral Diagnosis.** Oral examinations, methods of investigation, recording of clinical data, and use of diagnostic laboratory aids. (1 cr; 10 lect hrs) Yamane and staff
81. **Roentgenology.** Lectures and demonstrations on the application of Roentgen rays for dental diagnostic purposes. Includes the electrophysics of the apparatus, positioning of the films, angulation of the machine, processing and interpretation. (2 cr; 20 lect hrs) Petersen
130. **Oral Diagnosis.** Series of lectures on the clinical appearance, natural history, and treatment of oral lesions. Oral manifestations of systemic and local diseases are also discussed. (2 cr; 20 hrs) Yamane and staff
- 130C. **Oral Diagnosis Clerkship.** Junior students serve clerkships in the oral diagnosis clinic and participate in oral diagnosis and treatment planning seminars. (1 cr; 18 clin and 12 sem hrs) Yamane and staff
- 132C. **Roentgenology Clerkship.** Students serve regular clerkships in roentgenology — taking, processing, and mounting dental x-rays. Concurrent with the clerkship, conference sections are arranged for small groups of students in which radiographs of clinical patients are read and interpreted. (1 cr; 18 clin hrs) Yamane, Petersen
135. **Oral Medicine.** Internal medicine for dental students. Systemic diseases as they affect the dental practice are discussed. Principles of physical diagnosis, history taking, diagnosis and management of office emergencies, and clinical

## School of Dentistry

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pharmacology are also discussed. Small group conferences on procedures for physical diagnosis, respiratory and cardiac resuscitation, emergency medications and equipment, and ward rounds are arranged. (2 cr; 20 hrs) Yamane and staff

**137C. Oral Diagnosis Clinic.** Students serve clerkships in oral diagnosis. (1 cr; 30 clin hrs) Staff

**138. Diagnostic Oral Roentgenology.** Lectures on interpretations of intraoral and extraoral roentgenograms and radiobiology. (1 cr; 10 hrs) Yamane, Petersen

### Division of Oral Pathology

#### *Professor*

Robert J. Gorlin, D.D.S., M.S., *chairman*

#### *Assistant Professor*

Heddie O. Sedano, B.D.S., M.S.

#### *Associate Professor*

Burton L. Shapiro, D.D.S., M.S.D., Ph.D.

Robert A. Vickers, D.D.S., M.S.D.

**161-162. Oral Pathology.** Lectures and laboratory work covering the histopathology of the teeth and related oral tissues including embryologic considerations. Special pathology of the oral region as well as the relation of local pathologic findings to systemic conditions and to general pathology is emphasized. Microscope required; use of microscope may be obtained by purchasing \$3 microscope card from bursar. (3 cr per qtr; 40 lect and 40 lab hrs) Gorlin and staff

### Division of Oral Surgery

#### *Professor*

Daniel E. Waite, D.D.S., M.S., *chairman*

Mellor R. Holland, D.D.S., M.S.D.

Norman O. Holte, D.D.S., M.S.D.

#### *Clinical Assistant Professor*

Dean S. Brandsness, D.D.S.

William R. Frantzich, D.D.S., M.S.D.

Daniel A. Larson, D.D.S., M.S.

William C. Randall, D.D.S., M.S.D.

Franklin R. Stickel, D.D.S., M.S.D.

#### *Clinical Associate Professor*

Theodore H. Dedolph, D.D.S., M.S.D.

#### *Clinical Instructor*

Kenneth J. Richter, D.D.S.

#### *Assistant Professor*

Harrie T. Shearer, D.D.S., M.S.

#### *Lecturer*

Warren R. Schram, D.D.S., M.S.D.

**90. Dental Anesthesiology.** The principles of local and general anesthesia are discussed and illustrated. (1 cr; 10 lect hrs) Holte and staff

**91. Oral Surgery I.** Introductory principles and practice of oral surgery. Armamentarium, diagnostic procedures, and the indication for tooth removal are presented. (1 cr; 10 lect hrs) Holland and staff

**150-151. Oral Surgery II.** The technic for removal of erupted and unerupted teeth, and alveolectomy procedures presented by lectures, slide and motion pictures. Surgical procedures in relation to systemic disease, hospital operating room, and the correlation of the basic sciences are important considerations. The diagnosis and treatment of infections and injuries are covered in detail. (1-2 cr; 30 lect hrs) Waite and staff



- 152C. Oral Surgery Clinic for Juniors.** This clinic provides primarily observation and assisting experience in oral surgery for the junior students. Some minor oral surgical procedures may be performed. (No cr; 15 hrs) Waite and staff
- 153. Oral Surgery III.** Senior seminar in oral surgery. Special conditions relating to oral surgery such as fractures of the jaws, cysts, benign tumors, jaw deformities, and affections of the nerves of the face and oral cavity make up the course. (1 cr; 10 lect hrs) Shearer and staff
- 154. Emergency Care.** The place of the dentists in the medical team in the event of natural or man-made disaster. Instruction in civil defense planning, sorting of casualties, first aid treatment of shock, hemorrhage control, maintenance of the airway, burns, fractures, wounds and sanitation, and radiation aspects of mass casualty situations. (1 cr; 10 lect hrs) Waite and staff
- 155C. Oral Surgery Clinic for Seniors.** Five-day periods on two occasions provide the senior student with his clinical experience in oral surgery in the School of Dentistry and the hospital. The time is devoted to the active practice of tooth removal, alveolectomy, alveoloplasty, and biopsy procedures. The treatment of infection and general postoperative condition will be a part of this experience. (2 cr; 60 hrs) Waite and staff

### Division of Orthodontics

*Professor*

Robert J. Isaacson, D.D.S., M.S.D., Ph.D.,  
*chairman*

Charles D. Simpson, D.D.S., M.S.D.  
Frank W. Worms, D.D.S., M.S.D.

*Assistant Professor*

*Clinical Professor*

Sherwood R. Steadman, D.D.S., M.S.

T. Michael Speidel, D.D.S., M.S.D.

*Lecturer*

*Clinical Associate Professor*

Theodore T. Edblom, D.D.S., M.S.D.  
Richard C. Paulson, D.D.S., M.S.D.

Walter M. Jacobsen, D.D.S., M.S.

- 100. Development of Occlusion.** Factors contributing to the normal and abnormal development of the deciduous, mixed, and permanent dentitions. (4 cr; 30 lect and 30 lab hrs) Isaacson and staff
- 105. Orthodontics.** Principles and procedures in preventive, interceptive, and corrective orthodontics. Analysis of cases and treatment planning. (2 cr; 20 lect hrs) Staff

### Division of Pediatric Dentistry

*Assistant Professor*

Freeman N. Rosenblum, D.D.S., M.S.D.,  
*acting chairman*

*Instructor*

Elliot B. Karpeles, D.D.S.

*Clinical Associate Professor*

Kenneth C. Erickson, D.D.S.

*Clinical Instructor*

Carl D. Bauer, D.D.S.  
Anthony L. Lund, D.D.S.  
Patrick F. Mascia, D.D.S.  
Bruce M. Nelson, D.D.S.  
Kenneth C. Nordberg, D.D.S.  
Gregory F. Swenson, D.D.S.  
Lennard R. Lindquist, D.D.S.

*Clinical Assistant Professor*

Robert J. Boller, D.D.S., M.S.D.  
Laurence A. Garfin, D.D.S.  
M. Richard White, D.D.S.

## *School of Dentistry*

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- 170. Pediatric Dentistry.** Lectures covering the pediatric implications in behavior management, nutrition, caries control, and oral pathological problems of the soft and hard tissues. (1 cr; 10 lect hrs) Rosenblum
- 171. Pediatric Dentistry.** Principles of diagnosis, treatment planning, restorative procedures, endodontics, interceptive orthodontics are discussed in terms of caring for the child patient. (1 cr; 10 lect hrs) Rosenblum
- 171L. Pediatric Dentistry Laboratory.** Instruction on the technics and principles of cavity design in the primary teeth. The manipulation of amalgam and stainless steel is stressed. Several space maintainers are fabricated. (1 cr; 15 lab hrs) Rosenblum and staff
- 172. Pediatric Dentistry.** Physical and emotional development of the child is discussed. In addition, handicapping conditions as impairment of motor functions, mental retardations, cleft lip and palate, blood dyscrasias, and other systemic diseases are discussed in respect to the difficulties involved in managing the dental problems. (1 cr; 10 lect hrs) Rosenblum
- 173C-174C-175C. Clinical Pediatric Dentistry.** Preliminary indoctrination to clinical procedures consisting of small group clinics demonstrating operative procedures on patients. During the remainder of the senior year the student is assigned a group of patients in the age range of 3 through 12 with different dental problems such as behavioral management, rampant caries, and minor orthodontic irregularities. The student acquires experience in the areas of diagnosis, treatment planning, restorative dentistry, endodontics, interceptive orthodontics, caries prevention, and the use of premedication. (1 cr per qtr; 90 clin hrs) Rosenblum and staff



*Undergraduate Dental Student Teaching Oral Hygiene  
to Patient and Parent*

Division of Periodontics

Associate Professor

Lars E. A. Folke, L.D.S., M.S.D., *chairman*  
Carl L. Bandt, D.D.S., M.S.D., M.S.,  
*clinical director*

Professor

Erwin M. Schaffer, D.D.S., M.S.D.

Clinical Associate Professor

Norman A. Korn, D.D.S., M.S.D.  
George C. Lawther, D.D.S., M.S.D.

Assistant Professor

James H. Butler, D.D.S., M.S.

Clinical Assistant Professor

George E. Fischer, D.D.S., M.S.D.  
William L. Hartwick, D.D.S.  
Kent A. Hove, D.D.S., M.S.D.  
Willis B. Irons, D.D.S., M.S.D.  
Millard J. Kimery, D.D.S., M.S.D.  
Ronald E. LaBelle, D.D.S., M.S.D.  
Patrick J. Murphy, D.D.S., M.S.D.  
Eric E. Stafne, D.D.S., M.S.D.  
Gregory R. Stende, D.D.S.

Clinical Instructor

James A. Swenson, D.D.S.

- 95. **Periodontics.** Introduction to periodontal disease including clinical instruction in dental prophylaxis. (2 cr; 10 lect and 20 clin hrs) Folke and staff
- 96. **Periodontics.** (Continuation of Dent 95) Includes treatment of gingivitis. Concepts of occlusion are also included. (2 cr; 10 lect and 20 clin hrs) Folke and staff
- 180-181-182. **Periodontics.** Histology and pathology of the structures involved in periodontal disease. Etiology, diagnosis, treatment, and prevention of periodontal disease are included. (1 cr per qtr; 30 lect hrs) Bandt, Folke, Korn, La Belle
- 186C. **Periodontics Clinic.** Clinical practices in the treatment of diseases affecting the investing tissues of the teeth. (4 cr; 120 clin hrs) Bandt and staff

Division of Prosthodontics

Professor

Andrew T. Morstad, D.D.S., M.S., *chairman*  
E. Severn Olsen, D.D.S., M.S.D.

Clinical Professor

Roy M. Jernall, D.D.S.

Associate Professor

Maurice W. Meyer, D.D.S., Ph.D.

Clinical Associate Professor

Edward E. Anderson, D.D.S., M.S.  
Lee A. Harker, D.D.S.  
Robert J. Jacobsen, D.D.S.  
Allan D. Petersen, D.D.S.  
Clarence N. Reiersen, D.D.S.

Assistant Professor

Richard J. Goodkind, D.D.S., M.S.D.

Clinical Assistant Professor

David G. Anderson, D.D.S.  
Leonard H. Arndt, D.D.S.  
Donald O. Erickson, D.D.S.  
John F. Erickson, D.D.S.  
Edward H. Lechner, D.D.S.  
Imants R. Niels, D.D.S.  
Walter S. Warpeha, D.D.S.

Clinical Instructor

Patrick A. Cady, D.D.S.  
George J. Hayano, D.D.S.  
Jerome H. Kleven, D.D.S.

- 60-61. **Dental Prosthetics.** Lectures, demonstrations, and laboratory instruction covering the various phases of complete denture prosthetics; the manipulation and use of prosthetic dental materials, fundamental principles of complete denture construction including primary and final impressions, pouring casts, establishing jaw relationships, the arrangement of denture teeth, and principles of occlusion; prescription writing and the student relationship with dental laboratories. (3-2 cr; 90 lab and 20 lect hrs) Morstad, Petersen, and staff

## School of Dentistry

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- 70. Dental Prosthetics.** A lecture series presents an introduction to designing of partial dentures by coordinating the laboratory instruction with the knowledge the student is acquiring in the basic science courses. (1 cr; 10 lect hrs) Goodkind and staff
- 70L. Dental Prosthetics Laboratory.** Instruction includes the construction of cast removable partial dentures on models. (2 cr; 60 lab hrs) Morstad and staff
- 110-111. Dental Prosthetics.** Lectures on complete and partial denture prosthesis correlating the student's accumulated knowledge in the fundamental sciences and dental technics to enable him to carry out procedures and solve problems associated with removable denture prosthesis. (1 cr per qtr; 20 lect hrs) Morstad and Goodkind
- 110C-111C-112C. Dental Prosthetics Clinic.** Clinical practice in removable complete denture prosthesis. Patients are assigned to seven students with one instructor. Through the use of demonstrations and seminars, complete upper and lower dentures are made for each patient. An integral part of the program is to develop an understanding of the biomechanical aspects of dental prosthesis and also to teach the proper and efficient use of auxiliary dental personnel such as the laboratory technician. As the student advances through the year, less supervision is given. (2 cr per qtr; 180 clin hrs) Morstad, Goodkind, Petersen, and staff
- 115C-116C-117C. Dental Prosthetics Clinic.** Clinical practice in removable denture prosthesis continuing the work of the junior year. In addition, immediate denture prosthesis, three partial dentures, and prosthesis for an abnormal mouth condition are required. Practical examinations are given encompassing clinical practices taught in the course. (2 cr per qtr; 180 clin and lab hrs) Morstad, Goodkind, Petersen, and staff
- 128. Seminar: Restorative Dentistry.** Correlated series of lectures on the clinical approach to crown and bridge, operative, periodontic, and removable prosthetic dentistry which overlap in technical procedures and biological concepts. (1 cr; 10 lect hrs) Morstad, Jensen, Yock, Folke

### Nondivisional Courses

#### Professor

George M. Yamane, D.D.S., Ph.D.

#### Associate Professor

Anna T. Hampel, D.D.S., M.S.D.  
Maurice W. Meyer, D.D.S., Ph.D.

#### Clinical Associate Professor

Robert J. Jacobsen, D.D.S.

#### Assistant Professor

Odin M. Langsjoen, B.A., D.D.S.  
Heddie O. Sedano, D.D.S., M.S.

#### Clinical Instructor

Cory H. Kruckenberg, D.D.S.

#### Clinical Assistant Professor

James R. Folske, D.D.S.  
Peter M. Holm, D.D.S.  
Eric G. Schleder, M.S., D.D.S.

- 50-51. Oral Anatomy and Histology. Lectures:** Dental nomenclature with special attention to etymology and application of terms used in various divisions of dentistry; detailed study of all deciduous and adult teeth, including calcification, eruption, decalcification and exfoliation; tooth form; function; stresses and all phases of occlusion; surrounding tissues; pulp cavities and anomalies. The histology of the teeth and related oral tissues including embryologic development. **Laboratory:** Projects include outline drawings, plastine modeling, wax carvings by various methods of individual teeth and as an anatomical unit.

- Sectioning of teeth and microscopic study of teeth and surrounding tissues. (4-3 cr; 80 lab and 40 lect hrs) Langsjoen, Sedano, and staff
52. **Biomaterials.** Lectures on the physical, chemical, and mechanical properties of materials used in dentistry with emphasis on their biological effects on the dental and oral tissues. (2 cr; 20 lect hrs) Hampel and faculty members from Crown and Bridge, Operative Dentistry, Oral Anatomy, and Prosthodontics
- 52L. **Biomaterials Laboratory.** Laboratory projects to illustrate principles involved in the successful manipulation of dental materials. (2 cr; 60 lab hrs) Hampel and faculty members from Crown and Bridge, Operative Dentistry, Oral Anatomy, and Prosthodontics
65. **Orientation to Oral Health Science.** Prior to the beginning of fall classes, the freshman students will be given a series of special lectures on the science of dentistry as part of their general orientation program. In these lectures, faculty will bring the curriculum and the profession into a proper perspective for the first-year student. Philosophy and responsibility of the dental profession to practice preventive dentistry and comprehensive dental care will be stressed. During fall quarter, the freshman students will find this information useful as they observe the rendering of oral health care in the dental clinics of the School of Dentistry. (No cr; 10 clin hrs) Yamane and staff
72. **Introduction to Occlusion.** Principles of occlusion with consideration of the neuromuscular mechanism, jaw function, and articulation. (2 cr; 10 lect and 20 lab and clin hrs) Faculty members from the several disciplines in the school concerned with the principles and biodynamics of occlusion.
- 149C. **Treatment Planning Clinic.** As part of the Comprehensive Care Program, senior students spend time in this special clinic in the care of emergencies and treatment planning. (1 cr; 30 clin hrs) Hampel and staff

## Nondivisional Activities and Programs

### Cleft-Palate — Maxillofacial Clinic

Ralph B. Kersten, D.D.S., Coordinator and Associate Professor

### Electronmicroscopy

Donald D. Hickman, Ph.D., Assistant Professor

### Dental Section of the University Community Health Care Clinic

T. Michael Speidel, D.D.S., M.S.D., Director and Assistant Professor  
Elliot B. Karpeles, D.D.S., Instructor

### Hospital Dentistry Program

E. Severn Olsen, D.D.S., M.S.D., Chief and Professor

**Dent 106. Hospital Dentistry.** Lectures on operating room protocol, hospital records, surgical and restorative dentistry in the hospital, general anesthesia and supportive therapy for the hospitalized patient, and other matters pertaining to the care of dental patients in the hospital. Clinical laboratory exercises deal with nutrition and diet, hospital rounds, scrubbing and gowning, conduct in the operating room, interpretation and preparation of charts, and clinical pathological conferences. (1 cr; 10 lect and 12 clin hrs) Olsen and staff

**Dent 106C. Hospital Dentistry Clerkship.** Orientation to and experience in management of hospitalized patients, including diagnosis and treatment planning, station visits, tumor conferences, clinical dental treatment, assisting staff on



*Faculty Member and Dental Students Seeing Patient  
in Hospital for Corrective Jaw Surgery*

dental procedures in the operating room at University and community hospitals, and treatment procedures in the hospital emergency room. (1 cr; minimum of 30 hrs) Olsen and staff

**Maxillofacial Prosthetics**

Arthur H. Bulbulian, D.D.S., Clinical Professor

**Oral Biology**

Burton L. Shapiro, D.D.S., M.S.D., Ph.D., Chairman and Associate Professor

**Dent 165. Oral Biology: Fundamental and Applied.** Seminar-like discussions of the most current concepts of certain oral diseases and conditions with integration of the basic science and clinical aspects of these abnormalities. Discussions will be on topic basis with several faculty often participating at the same 2-hour session. Diseases and conditions will include caries, malignancies, malocclusion, periodontal disease, and pulpal disease. (2 cr; 20 lect hrs) Singer, Shapiro, and other basic science and clinical faculty members

## **CONTRIBUTING DEPARTMENTS**

### **Anatomy**

*Professor*

Arnold Lazarow, M.D., Ph.D., *head*  
Anna-Mary Carpenter, Ph.D., M.D.  
R. Dorothy Sundberg, Ph.D., M.D.  
Lemen J. Wells, Ph.D.

*Associate Professor*

Padmakar K. Dixit, Ph.D.  
Carl B. Heggstad, Ph.D., M.D.  
Morris Smithberg, Ph.D.  
Richard L. Wood, Ph.D.

Assistant Professor

Dean E. Abrahamson, M.D., Ph.D.  
G. Eric Bauer, Ph.D.  
David R. Kvistberg, Ph.D.

Lecturer

Robert J. Isaacson, D.D.S., M.S.D., Ph.D.  
Arnold W. Lindall, M.D., Ph.D.

- 105. Microscopic Anatomy.** Histology of human cells, tissues, and organs, with special emphasis on oral structures. (6 cr; 100 hrs; prereq regis in School of Dentistry) Bauer, Dixit, and staff
- 108. Gross Human Anatomy for Dental Students.** Lecturers and dissection of extremities, abdomen, and pelvis. (6 cr; 120 hrs) Bauer and staff
- 109. Gross Human Anatomy for Dental Students.** Lectures and dissection of thorax, head, and neck. (6 cr; 120 hrs) Sorenson and staff
- 110. Human Neuroanatomy.** Devoted to a study of the gross and microscopic structure of the central nervous system with emphasis on structure related to function. Laboratory demonstrations include gross anatomy of the brain stem. (3 cr; 20 lect and 20 lab hrs; prereq 105 or ♯) Abrahamson and staff

Biochemistry

Professor

Wallace D. Armstrong, Ph.D., M.D., head  
Leon Singer, Ph.D.  
Charles W. Carr, Ph.D.  
Frank Ungar, Ph.D.

John F. Van Pilsum, Ph.D.  
Donald B. Wetlaufer, Ph.D.

Assistant Professor

Ernest D. Gray, Ph.D.  
Bernard Pollard, Ph.D.  
C. Roberto Umana, M.D., Ph.D.

Associate Professor

Robert W. Bernlohr, Ph.D.  
James F. Koerner, Ph.D.

- 104. Medical Biochemistry for Dental Students.** (6 cr; 50 lect and 30 lab hrs; \$5 physiological chemistry card must be purchased from bursar...lab desks not assigned until this card is presented...cost of special chemicals, nonreturnable equipment, and breakage chargeable against deposit) Singer, Bernlohr
- 105. Medical Biochemistry for Dental Students.** (6 cr; 50 lect and 30 lab hrs) Singer, Gray, Pollard, Umana

Microbiology

Professor

Dennis W. Watson, Ph.D., head  
S. Gaylen Bradley, Ph.D.  
K. Gerhard Brand, M.D.  
Robert A. Good, M.D., Ph.D.  
Wendell H. Hall, M.D., Ph.D.  
James J. Jezeski, Ph.D.  
Robert K. Lindorfer, Ph.D.  
Louis H. Muschel, Ph.D.  
Edwin L. Schmidt, Ph.D.  
Henry M. Tsuchiya, Ph.D.  
Louis W. Wannamaker, M.D.

S. Stephen Chapman, Ph.D.  
Martin Dworkin, Ph.D.  
Velvl W. Greene, Ph.D.  
Howard M. Jenkin, Ph.D.  
Gerald M. Needham, M.D.  
Palmer Rogers, Ph.D.  
John A. Ulrich, Ph.D.

Assistant Professor

Alan B. Hooper, Ph.D.  
Russell C. Johnson, Ph.D.  
Yoon B. Kim, M.D., Ph.D.  
Dolph Klein, Ph.D.  
Peter G. W. Plagemann, Ph.D.  
James T. Prince, M.S.

Associate Professor

Dwight L. Anderson, Ph.D.  
Robert W. Bernlohr, Ph.D.

## School of Dentistry

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*Instructor*

David E. Peterson, B.A.

*Lecturer*

Alfred G. Karlson, D.V.M., Ph.D.

- 100. Microbiology for Dental Students.** Morphology; methods of staining; culture media; methods of identification; principles of sterilization and disinfection; antibiotics; fundamentals of immunology; pathogenic bacteria, fungi, and viruses; oral flora; bacteriology of oral infections, dental caries, and periodontal disease; relationship of oral infections to other focal and general infections. (6 cr; 50 lect and 40 lab hrs; microscope required...use of microscope may be obtained by purchasing \$3 microscope card from bursar) Anderson and staff



*Freshman Students in Microbiology Teaching Laboratory*

## Pathology

*Professor*

James R. Dawson, Jr., M.D., *head*  
Franz Halberg, M.D. (Experimental  
Pathology)  
Robert Hebbel, M.D., Ph.D.  
Paul H. Lober, M.D., Ph.D.  
Lee W. Wattenberg, M.D.

*Associate Professor*

John I. Coe, M.D.  
Donald F. Gleason, M.D., Ph.D.  
Kenneth A. Osterberg, M.D.

*Assistant Professor*

Walter J. Runge, M.D.  
(Experimental Pathology)  
Robert E. Rydell, M.D.

*Instructor*

William R. Anderson, M.D.  
Erhard Haus, M.D.  
Wayne H. Schrader, M.D.  
Robert L. Strom, M.D.  
Charles E. Weigent, M.D.  
Bertram F. Woolfrey, M.D.

- 100. Pathology for Dental Students.** Circulatory disturbances, metabolic change in cells and tissues, pigment deposits, inflammations, and tumors. Pathology of



selected diseases, tumors, and lesions affecting the mouth and dental structures. Exercise in gross and microscopic diagnosis. (8 cr; 50 lect and 80 lab hrs; microscope required...use of microscope may be obtained by purchasing two \$3 microscope cards from bursar) Dawson and staff

## Pharmacology

### *Professor*

Frederick E. Shideman, M.D., Ph.D., *head*  
Raymond N. Bieter, M.D., Ph.D.  
Edward J. Cafruny, M.D., Ph.D.  
Norman O. Holte, D.D.S., M.S.D.  
Frank T. Maher, M.D., Ph.D.  
Gilbert J. Mantering, Ph.D.  
Amedeo S. Marrazzi, M.D.  
Jack W. Miller, Ph.D.  
Wallace F. White, Ph.D.

### *Associate Professor*

Bernard L. Mirkin, M.D., Ph.D.  
Akira E. Takemori, Ph.D.  
Travis I. Thompson, Ph.D.

### *Assistant Professor*

James F. Cumming, M.D., Ph.D.  
Nelson D. Goldberg, Ph.D.  
Donald B. Humminghake, M.D.  
Harvey J. Kupferberg, Ph.D.  
Roy W. Pickens, Ph.D.  
Ben G. Zimmerman, Ph.D.

### *Instructor*

Faruk S. Abuzzahab, M.D.  
Sheldon B. Sparber, Ph.D.

**102. General Pharmacology.** Lectures and laboratory exercises on the action and fate of drugs. Limited to students of dentistry and pharmacy. (7 cr; 60 lect and 30 lab hrs) Kupferberg, Zimmerman, and staff

**108. Dental Therapeutics.** (1 cr; 10 lect hrs; prereq 102) Holte and staff

## Physiology

### *Professor*

Eugene D. Grim, Ph.D., *head*  
H. Meade Cavert, M.D., Ph.D.  
John A. Johnson, Ph.D., M.D.  
Nathan Lifson, M.D., Ph.D.  
Victor Lorber, M.D., Ph.D.  
Carlo A. Terzuolo, M.D.  
Maurice B. Visscher, M.D., Ph.D.

### *Associate Professor*

Marvin Bacaner, M.D.  
Irwin J. Fox, M.D., Ph.D.  
Rodney B. Harvey, M.D., Ph.D.

### *Assistant Professor*

James S. Beck, M.D., Ph.D.  
Jui S. Lee, Ph.D.  
Richard E. Poppele, Ph.D.  
Richard I. Purple, Ph.D.  
Russell A. Whitehead, Ph.D.

### *Lecturer*

Ali A. Hakim, M.D., Ph.D.  
John Love, Ph.D.  
Maurice W. Meyer, D.D.S., Ph.D.

**101. Human Physiology.** Principles of physiology for dental students and others. Physiology of cells, muscle, nerve, central nervous system, senses, blood, circulation, respiration, digestion, metabolism, endocrines, excretion. (8 cr; 70 lect and 30 lab hrs) Staff

# GRADUATE EDUCATION

## GENERAL INFORMATION

Graduate work through the School of Dentistry and the Graduate School of the University of Minnesota is offered at both the master of science and doctor of philosophy levels.

The M.S. program is designed to meet dentistry's need in two areas. The first concerns the preparation of qualified teachers and investigators in the various branches in dentistry. The second is for the preparation of fully trained specialists for the different dental fields. The major is in some special phase of dentistry and usually the minor is in a basic health science. Some fellowships, teaching assistantships, and teaching associateships are available for graduate students pursuing the M.S.D. degree.

The Ph.D. program has been developed to educate competent teachers and research workers. In this program, the major is in a basic health science and the minor is in a special area of dentistry. The Ph.D. can be earned in postsophomore and postdoctoral programs supported by grants that provide stipends and free tuition for qualified students.

**Application for Enrollment** — Application to pursue the course of graduate study should be initiated by a letter to the dean of the Graduate School, requesting an application form and the appropriate bulletin. This form, completely filled out, should be submitted to the dean of the Graduate School for evaluation.

**Notification of Acceptance** — Acceptance for graduate study is contingent upon the applicant's qualifications, facilities available for the course of study requested, and upon vacancies in the area indicated. Notification of acceptance or rejection will come from the Graduate School office.

**Registration** — Each student will choose an adviser, normally that faculty member whose scholastic and research interests most closely parallel his own. He will secure registration forms in the Graduate School office each quarter during the periods scheduled for registration, and will have them signed by his adviser, and will present them at the Graduate School office for the approval of the dean of the Graduate School.

**Tuition** — The tuition fee for graduate work in dentistry is \$168 per quarter for residents and \$380 per quarter for nonresidents. For students who are majoring in the fundamental sciences, the tuition fee is \$104 per quarter for residents and \$280 per quarter for nonresidents.

## Programs for the Degree of Doctor of Philosophy

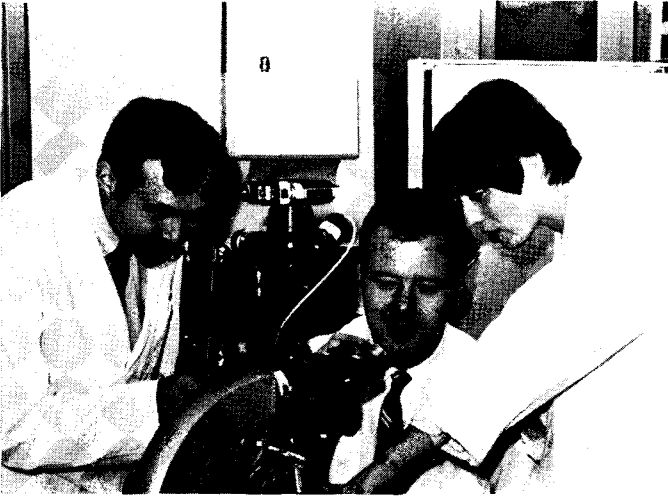
In the Graduate School, one Doctor's degree, the doctor of philosophy (Ph.D.), is conferred by the University of Minnesota. Work toward this degree in conjunction with the School of Dentistry is offered for the purpose of training teachers and research workers for the various areas of dentistry. In these programs the student selects a major field of study in one of the

## *Graduate Education*

basic health sciences. Study in the major field is identical to the required work in the major of Ph.D. programs offered through the Graduate School in conjunction with the various basic health science departments. The minor field of study, however, is in dentistry and usually in an area of a recognized dental specialty. Work in the minor field is similar to the requirements of programs leading to board eligibility and/or the degree of master of science in dentistry offered through the Graduate School in conjunction with the School of Dentistry.

This training is offered under two separate programs. In the first program, qualified dental students enroll in the Graduate School at the end of the sophomore year of dental school. For a minimum of the next 3 full years these students register concurrently in both the School of Dentistry and the Graduate School. At the end of 3 years, work toward the D.D.S. degree is completed. Work toward the Ph.D. degree and M.S.D. training and board eligibility is completed at the end of a minimum of 3 additional years. A stipend of \$2,200 per year plus dependency allowances is available for the first 3 years. Stipends ranging from \$6,500 to \$7,000 per year plus dependency allowances are available for the second 3 years and tuition is paid throughout the program.

In the second type of program, graduates holding a D.D.S. or D.M.D degree also may work toward a Ph.D. degree. The major field of study also is selected in one of the basic medical health departments and the minor is in dentistry as described above. Stipends ranging from \$6,000 to \$7,000 per year plus dependency allowances are available and tuition is paid in this program.



*Faculty Member Demonstrating to Graduate Student and Undergraduate Research Fellow the Use of Research Microscope*

## *School of Dentistry*

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Further information regarding these programs may be secured from the School of Dentistry or the Graduate School and by referring to bulletins of the Graduate School.

### **Programs for the Degree of Master of Science in Dentistry**

#### *Requirements for Enrollment*

**Eligibility** — To be eligible for enrollment in this program the applicant must be a graduate of an accredited school of dentistry and must have achieved in both preidental and dental requirements a superior scholastic record, which shall be demonstrated by a standing in the top fourth of his graduating class, or by an average of B or better.

**Major** — The aim of the program of study is to achieve mastery of a specific field of knowledge. This field is designated the major subject. Not less than 18 credits of the study program will be in the major subject. The minimum acceptable quality in these courses is indicated by a grade of B.

**Minor** — Each student must select an area of study in the basic sciences which is logically related to his major subject and his research project. Not less than 9 credits of the study program will be in the minor subject. The minimum acceptable quality in these courses is indicated by a grade of C.

**Research and Thesis** — The M.S. in dentistry is offered under Plan A, the plan which requires a thesis. Each candidate must submit a thesis. The thesis shall present evidence of ability and accomplishment in the planning and the prosecution of scientific research by the candidate and should demonstrate significant accomplishment on the part of the candidate in applying the scientific method. It is especially to be noted that the tabulation of data confirming earlier established observations is not acceptable. Statistical studies of clinical material may, however, be appropriate if through such studies new discoveries are made. The distinction between the Master's and the Doctor's dissertation shall be in the importance and extent of the studies in question. Both shall represent contributions to knowledge made by the candidate. The candidate himself shall make the majority of the original observations upon which the thesis is based, except in unusual cases where the problem would not permit.

No material which has been published prior to its approval by the thesis committee may be used to meet the thesis requirement. Candidates contemplating publication of any material that they expect to present for a thesis should therefore obtain approval through the Graduate School office.

The Master's thesis must be typewritten in quadruplicate, two copies on 20-pound linen stock of 75 percent rag content, the others on 13-pound bond paper. Samples of the paper required should be examined in the office of the dean of the Graduate School. The original and first copy must contain all illustrative material. Ample margins should be left for binding purposes. The body of the thesis should be double spaced, but footnotes may be single spaced. A copy of the thesis, certified by the adviser as complete, must be registered in the office of the Graduate School. Students should consult the Graduate School office for dates when their theses must be registered, but the thesis

committee and Graduate School must have copies of the finished thesis at least a full quarter before the oral examination. The thesis will be examined by a committee of not less than three appointed by the dean of the Graduate School on recommendation of the Dental Subcommittee of the Graduate School Medical Science Group Committee. Unanimous approval by the thesis committee is necessary for the acceptance of the thesis, and a record of this approval must be filed in the Graduate School office on the appropriate form before the candidate may be admitted to the final written and oral examinations. The Graduate School in any case should be informed, on the appropriate blank, of the action of the thesis committee.

In the event that a Rochester member is assigned to the committee of a Twin City student the Rochester member will read the thesis forwarded by the Graduate School. Prior to the date of the final oral examination the student will have arranged a personal appointment with the Rochester member, usually traveling to Rochester for this purpose. The student will bring the thesis approval form with him to Rochester. The Rochester member will have at this time an opportunity to discuss the thesis and suggest any improvements. If he approves the thesis, he will sign the thesis approval form which is returned by the student to the Graduate School. The Rochester member will also at this time have the option to elect to come to Minneapolis for the final oral examination or to agree to abide by the decision of the rest of the committee. The thesis will be returned with the student.

Conversely, a Rochester student who has a Minneapolis member appointed to his committee will arrange an appointment with this member prior to his oral examination and travel to Minneapolis for this purpose. In both instances, it will be the responsibility of the student to accomplish this approval sufficiently in advance of the final oral examination so as to allow for minor additions or alterations.

If the thesis is accepted, the candidate must deposit with the Office of Admissions and Records, at least 5 weeks before the commencement in which he wishes to take his degree, the sum of \$5 for binding two copies of the thesis, which will be cataloged and deposited in the University Library.

### *Course of Study Requirements*

**Program of Study** — Upon enrollment in the Graduate School, the student and his adviser will outline a tentative course of study, which must form a consistent plan of work pursued with a definite aim. The course of study leads to the degree of M.S. in dentistry, a combination of the conventional work for the master of science degree plus the achievement of proficiency in a special phase of dentistry. The different M.S. programs vary in length of time from 24 to 36 calendar months.

**Period of Trial** — The first period of study by a graduate student is a period of trial. Advancement toward the Master's degree will not be officially authorized until the student has completed 1 quarter of residence and has demonstrated competence in not less than 9 quarter credits of graduate work.

**Admission to Candidacy** — The student who expects to obtain a Master's degree must register his program and thesis title at least 2 full quarters before

## School of Dentistry

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graduation for his adviser's recommendation and transmission to the Dental Subcommittee of the Graduate School Medical Science Group Committee. The Plan A forms are provided by the Graduate School. A transcript of all grades must accompany the program. Approval by the Dental Subcommittee of the Graduate School Medical Science Group Committee and the Graduate School indicates the student's admission to candidacy for the degree.

**Examinations** — In addition to the usual course examinations in all subjects where such are given, the candidate for the Master's degree must pass final written and oral examinations.

The final written examination will be held prior to the oral examination. It will cover the major field and may include any work fundamental thereto. It is given by the members of the graduate faculty in the major department, the adviser acting as chairman.

The final oral examination is held when all other requirements for the degree have been met, including the final written examination and certification of the thesis by the thesis committee. The examination will be administered by the student's thesis committee. If the student's name is to be included in the commencement program, the oral examination must be completed at least 5 weeks before the commencement in which he expects to take the degree.

The final oral examination will be a defense of the thesis, may cover all the work offered for the degree, and may include other work fundamental thereto. At the close of the examination, the committee will vote upon the candidate, taking into account all of his work. A majority vote is required for approval.

**Recommendation by the Faculty** — The dean of the Graduate School will report to the Executive Committee of the graduate faculty the names of those who have completed the requirements for the degree, and those duly approved will be recommended by the faculty to the Board of Regents of the University. Unless excused by the dean of the Graduate School on the basis of a petition to receive the degree *in absentia*, all candidates are required to be present at commencement when the degrees are conferred.

### Areas of Study Available

At present, graduate courses in dentistry are offered in the major fields of endodontics, oral pathology, oral surgery, orthodontics, oral medicine, periodontics, and restorative dentistry. The M.S.D. degree in one of these major fields can be earned in a program designed exclusively for this degree or as one step in a program leading to the Ph.D. in a basic medical science with a minor in a special area of dentistry.

**Standards** — Graduate work in the field of dentistry follows the same general policies and methods established for graduate work in other sciences. This work requires high standards of admission, qualified advisers to graduate students, adequate laboratories and clinical equipment, courses and examinations in residence, and evidence of the power of productive research on the part of the student.

**Method of Study** — The plan of graduate study at the University of Minnesota implies an entirely different level of educational discipline from undergraduate course work. In the former, each student pursues his individual problem. While there will be ample consultation and guidance, the individual student's special interest in selection of subjects will be the basis for outlining the courses. The general principle of application of basic science to clinical problems is emphasized throughout.

## DESCRIPTION OF GRADUATE COURSES

### Oral Medicine

- 230f,w,s,su. Advanced Oral Diagnosis.** Basic principles of oral examinations, differential clinical diagnostic techniques, and treatment planning. Topics dealing with oral manifestations of systemic disease and systemic manifestations of oral disease assigned for collateral reading. (Cr and hrs ar) Yamane
- 231f,w,s,su. Advanced Clinical Oral Diagnosis.** Application of the basic principles of oral diagnosis; recording of clinical data and organizing and implementing a detailed treatment plan. (Cr and hrs ar) Yamane
- 232f,w,s,su. Research Problems in Oral Medicine.** (Cr and hrs ar) Yamane and staff
- 233f,w,s,su. Topics in Oral Medicine and Oral Roentgenology.** Special topics in medicine and/or roentgenology as related to dentistry will be assigned. (Cr and hrs ar) Staff
- 234f,w,s,su. Advanced Dental Roentgenology.** Systemic consideration of basic factors governing X-radiation, emphasizing recent advances in biophysics with special reference to technique and material used. Demonstration and practice. (Cr and hrs ar) Yamane and staff
- 235f,w,s,su. Advanced Clinical Roentgenology.** Student assists in teaching and participates in activities of oral roentgenology clinic. Opportunity for thorough study of intraoral and extraoral roentgenography and associated problems and techniques. (1-3 cr, hrs ar) Yamane and staff
- 236f,w,s,su. Research in Oral Roentgenology.** (Cr and hrs ar) Staff
- 237f,w,s,su. Advanced Treatment Planning Seminar.** Treatment and prognosis of advanced clinical cases discussed. (Cr and hrs ar) Staff

### Oral Pathology

- 260w,s. Oral Pathology and Histology.** Lectures and laboratory on histology of teeth and related oral tissues, including embryologic considerations. Special pathology of the oral region as well as relation of local pathologic findings to systemic conditions and to general pathology. Graduate students participate as laboratory assistants and meet further requirements. (4 cr; hrs ar) Gorlin, Vickers
- 262f,w,s,su. Research in Oral Pathology.** (Cr and hrs ar) Gorlin, Vickers
- 264f,w,s. Clinical Oral Pathology Conference.** (1 cr; hrs ar) Gorlin, Vickers
- 265f,w,s,su. Seminar: Histopathology Slides.** (1 cr; hrs ar) Vickers

## *School of Dentistry*

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- 266s. **Advanced Oral Pathology.** Salivary gland development and pathology; dental organ pathology; bone physiology and pathology; radiation pathology; dermatology; lymph node and/or reticuloendothelial pathology; soft tissue pathology pertaining to the head and neck. (4 cr; hrs ar) Vickers, Gorlin
- 267f,w,s. **Seminar: Human Genetics.** (1 cr; hrs ar) Gorlin
- 268f,w,s. **Current Literature Review.** (1 cr; hrs ar) Gorlin, Vickers

### **Oral Surgery**

- 250f,w,s,su. **Advanced Oral Surgery.** In this category are all clinical activities and duties of the oral surgery graduate student, including residencies at University, Veterans, and General Hospitals as well as the oral surgery clinic in the School of Dentistry. (Cr and hrs ar) Waite and staff
- 251f,w,s,su. **Seminar: Oral Surgery.** (1 cr; hrs ar) Waite and staff
- 252f,w,s,su. **Research in Oral Surgery.** (Cr and hrs ar) Waite and staff
- 253f,w,s,su. **Problems in Oral Surgery.** (Cr and hrs ar) Waite and staff
- 254w. **Applied Principles of Oral Surgery.** Principles of oral surgery relating to variety of procedures will be given in lecture form, then performed through dissection in the animal laboratory. (1 cr; hrs ar) Staff

### **Orthodontics**

- 200f, 201w, 202s, 203su. **Growth and Development.** Head growth, development, osteology, myology. Includes both normal and abnormal morphology and function with emphasis on cephalometric methods. (Cr and hrs ar) Isaacson and staff
- 204f, 205w, 206s, 207su. **Orthodontic Diagnosis and Treatment Planning.** Etiology treatment, and prognosis of clinical orthodontic patients. (Cr and hrs ar) Edblom, Isaacson, Paulson, Simpson, Worms
- 208f, 209w, 210s, 211su. **Orthodontic Seminar.** Review of current literature and discussion of current research and its implication to orthodontics. (Cr and hrs ar) Isaacson and staff
- 212f, 213w, 214s, 215su. **Research in Orthodontics.** (Cr and hrs ar) Isaacson and staff
- 216f, 217w, 218s, 219su. **Topics in Orthodontics.** Studies in special topics for advanced students. (Cr and hrs ar) Isaacson and staff

### **Pediatric Dentistry**

- 292f,w,s,su. **Seminar: Pediatric Dentistry.** Review of current literature and discussion of current research and its implication to pediatric dentistry. (Cr and hrs ar; prereq #) Rosenblum and staff

### **Periodontics**

- 280f,w,s,su. **Advanced Periodontics Clinic.** Includes clinical practice in examination, diagnosis, treatment planning, and treatment of periodontal disease. It includes the practice of curettage, splinting teeth, periodontal surgery, and treating traumatic occlusion. (Cr and hrs ar) Bandt and staff



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- 281f,w,s. Advanced Periodontics Lectures.** Consideration of the tissues involved in periodontal disease, and the etiology and treatment of periodontal disease. (3 cr; hrs ar) Folke, Butler
- 282f,w,s,su. Research in Periodontics.** Opportunity to take part in the many phases of periodontal research that are under way in the laboratory set up for periodontal research. (Cr and hrs ar) Folke
- 283f,w,s. Seminar: Periodontics.** Etiology of periodontal disease, histopathology of periodontal symptoms, treatment of periodontal disease, research in periodontics. (12 cr; hrs ar) Butler
- 284f,w,s. Supporting Structures of the Teeth.** The histology, pathology, and physiology of the gingival tissues, the cementum, the periodontal membrane, and the alveolar bone will be covered in lectures and in the laboratory. (3 cr; hrs ar) Folke
- 285w,s. Histochemistry of the Normal and Pathologic Periodontium.** (2 cr; hrs ar) Folke
- 286su. Bacteriology of Periodontal Diseases.** (2 cr; hrs ar) Korn



*Graduate Student in Periodontics Observing Clinical Demonstration  
by Faculty Member*

### **Restorative Dentistry**

- 220f,w,s,su. Advanced Oral Anatomy.** Under supervision, student assists in teaching and participates in activities in oral anatomy and histology. He also is assigned special problems. (Cr and hrs ar) Staff
- 240f,w,s,su. Advanced Technical Restorative Dentistry.** Teaching experience is integrated with technical solution of problems involving application of theories

## School of Dentistry

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of indeterminate stresses to more complex problems of tooth morphology. (Cr and hrs ar) Jensen, Goodkind, Yock, Morstad

- 243f,w,s,su. Advanced Clinical Restorative Dentistry.** Detailed application of clinical techniques provides comprehensive training in restorative dentistry through studies on clinical material, collateral reading, and conferences. Research methods and evaluation of data emphasized. (Cr and hrs ar) Jensen, Yock, Morstad, Olsen, Goodkind
- 245f,w,s. Seminar: Prosthodontics.** Current concepts and practices related to treatment of the partially edentulous patient. (Cr and hrs ar) Morstad, Olsen, Goodkind
- 246f,w,s. Seminar: Prosthodontics.** Consideration of the tissues involved and treatment of the completely edentulous patient. (Cr and hrs ar) Morstad, Olsen, Goodkind
- 247f,w,s,su. Research Problems in Restorative Dentistry.** Arranged with individual students upon application after a critical review of current and historical literature pertaining to the problem. (Cr and hrs ar) Jensen, Yock, Morstad, Olsen, Goodkind
- 248f,w,s. Advanced Prosthodontics.** Treatment planning and clinical practice for the partially edentulous patients and cleft palate patients. (Cr and hrs ar; prereq 245 or #) Morstad, Olsen, Goodkind, and staff
- 249f,w,s. Advanced Prosthodontics.** Treatment planning and clinical practice for the completely edentulous patient and cleft palate patient. (Cr and hrs ar; prereq 246 or #) Morstad, Olsen, Goodkind, and staff
- 270f,w,s,su. Introduction to Comprehensive Maxillofacial Care.** (Cr and hrs ar) Olsen and staff
- 271f,w,s,su. Principles of Maxillofacial Prosthetics.** (Cr and hrs ar; prereq 270) Olsen and staff
- 272f,w,s,su. Advanced Clinical Maxillofacial Prosthetics.** (Cr and hrs ar; prereq 270 or #) Olsen and staff
- 273f,w,s,su. Restorative Problems in Maxillofacial Prosthetics.** (Cr and hrs ar) Staff

## Endodontics

- 270f,w,s,su. Advanced Clinical Endodontics.** Diagnosis and treatment of clinical cases. Students will be assigned complex cases, and explore new and unique techniques. (1 cr; hrs ar) Jensen and staff
- 271f,w,s,su. Research in Endodontics.** Organized literature review in area of specific interest of student, selection of thesis project, and completion of research and thesis. (Cr and hrs ar) Jensen and staff
- 272f,w,s,su. Seminar: Endodontics.** Review current literature, research, and clinical cases. Sessions assigned to students. (2 cr; hrs ar) Jensen and staff
- 273f,w,s,su. Advanced Endodontic Lectures.** Pulpal and periapical pathology, diagnosis and treatment planning in endodontics. (1 cr; hrs ar) Jensen and staff

# PROGRAM IN DENTAL HYGIENE

## GENERAL INFORMATION

The Program in Dental Hygiene was established at the University of Minnesota in 1919. It is fully accredited by the Council on Dental Education of the American Dental Association. The purpose of the program is to fill the need for skilled dental hygiene personnel in the public schools, health departments, hospitals, industrial institutions, and dental offices to do dental prophylactic work and to teach oral hygiene as well as dental health education. This preventive work is recognized as being one of the prime health needs of our times. The health science training and liberal arts education, as thorough as possible in the 2-year program, are designed to give the student a professional education. The program includes training in dental assisting and laboratory work, and makes the graduate easily adaptable to the general duties of the private dental office, should that be the field of work selected.

The program requires 2 academic years of study and leads to the degree of graduate dental hygienist (G.D.H.). The offering of this course of study in the University makes it possible to teach all the subjects of the curriculum in the appropriate departments, thus assuring the student of a University contact and instruction under the best auspices.

The first year deals with preliminary science courses and dental technique. In many respects it corresponds to an academic student program. The second year is designed to prepare the student for prophylactic service in dental offices, hospitals, and clinics, and for the teaching of oral hygiene in health departments and schools. The dental hygienist must be able to take an active part in dental education and public dental health activities of the community.

After graduation a dental hygienist secures a license to practice by passing the dental hygiene examination required by the state in which she desires to locate. National Boards (written part) are acceptable in Minnesota and in a number of other states. In all instances she practices under the supervision of a licensed dentist or director of a public health program.

## Admission

Students are admitted to the Program in Dental Hygiene only at the beginning of each fall term.

**Special Requirements** — Applicants for admission to this program should be in the top 25 percent of their high school class. A college preparatory course with 1 year of high school chemistry is required, and geometry and typing are advantageous. MSAT and ACT scores must be made available upon application.

## Advanced Standing

Students with advanced standing, who plan to enter the Program in Dental Hygiene, must have at least a C average or better to be considered. High school records must be presented with college transfer.

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### Arts and Dental Hygiene

A program leading to the degrees of graduate dental hygienist and bachelor of arts may be arranged by consulting the office of the dean of the College of Liberal Arts. This may be done either before entering or after completing the Program in Dental Hygiene. Liberal arts courses taken while in the School of Dentistry or elsewhere may be applied toward these graduation requirements. Usually a total of 15 quarters will complete the work for both degrees.

### Application Procedure

All inquiries, credentials, and applications for admission to the undergraduate colleges should be addressed to the Office of Admissions and Records, University of Minnesota, Minneapolis, Minnesota 55455.

Application blanks may be obtained at any Minnesota high school or from the Office of Admissions and Records at the University of Minnesota. All applications should be filed as soon as possible. The closing date for applications is July 1 prior to the fall quarter in which the applicant expects to enroll. Applicants may be required to appear for a personal interview at the discretion of the admissions committee.

An admission certificate will be mailed to each student who has met the requirements. In addition, students entering from other colleges or universities will receive a statement of advanced standing. Instructions for the orientation-registration period will be enclosed with the admission certificate or will be mailed later—about 1 month before the opening of fall classes. Students must present their admission certificates when they report for registration.

### Fees

Tuition fee (per quarter)	
Residents of Minnesota .....	\$ 98.00
Nonresidents .....	280.00
Record service fee (applicable only to students new to the University of Minnesota) .....	1.00
Incidental fee (per quarter) .....	37.00
(For privileges such as the Coffman Memorial Union, the Health Service, and the <i>Minnesota Daily</i> )	
Graduation fee .....	10.00
Special fees:	
Examination for credit (after first quarter in residence) .....	5.00
Special examination (may be taken only upon approval of appropriate committee) .....	5.00

**Privilege Fees**—The fee for the privilege of late registration or late payment of fees is \$3 through the first week of classes. During the second week the fee is \$5 and after the second week the fee is \$10.

**Part-Time Fees**—Students not registered for the full course will be charged tuition at the rate of \$8.25 per credit for residents, \$23.50 for non-residents. However, at least 3 quarters of residence at full tuition are required for graduation.

## Equipment

The University will furnish the larger pieces of equipment needed for the work in clinic and laboratories, but the student must furnish her own uniforms, caps, white shoes, laboratory and operating instruments, textbooks, and supplies. These instruments and supplies will be needed during the first year and will cost approximately \$160. Lists of the required materials for new students will be available during orientation-registration periods.

## Awards

**Louise C. Ball Scholarship and Prize Fund** — Annual scholarship assistance is made available to a qualified graduating senior of the Program in Dental Hygiene, or a graduate hygienist of the University of Minnesota, who wishes to further her education in some other department within the University.

**Minneapolis District Dental Society Auxiliary** — An annual cash award is presented to the highest ranking freshman dental hygiene student.

**Sigma Phi Alpha** — National Dental Hygiene Honor Society is represented at Minnesota by Eta Chapter. This society recognizes and honors scholarship, service, and character among dental hygiene students. Not more than 10 percent of the graduating class is eligible.

**American Dental Hygienists Association** — The association administers five scholarships for well-qualified second-year dental hygiene students. These funds are awarded on a national competitive basis. Application may be made through the dental hygiene office in the School of Dentistry. The association also administers one or two postgraduate scholarships each year for graduates interested in becoming dental hygiene educators. Application may be made through the dental hygiene office.

## TWO-YEAR PROGRAM IN DENTAL HYGIENE

First Year	Fall Qtr		Winter Qtr		Spring Qtr		Total	
	Cr	Hrs	Cr	Hrs	Cr	Hrs	Cr	Hrs
Anat 4 — Elementary Anatomy .....	4	50					4	50
MicB — Elementary Microbiology .....			4	60			4	60
Engl 1-2-3 — Freshman English .....	3	30	3	30	3	30	9	90
DH 7 — Dental Anatomy .....	4	80					4	80
DH 21-22 — Dental Prophylaxis .....			2	40	2	60	4	100
MdBc 30 — Biochemistry .....	4	40					4	40
Phsl 2 — Human Physiology .....			4	50			4	50
PEW 13A — Posture, Individual Exercise .....					1	50	1	50
PubH 3 — Personal Health .....	2	20					2	20
Biol 1-2 — General Biology .....			5	90	5	90	10	180
DH 62 — Dental Roentgenology .....					1	10	1	10
	17	220	18	270	12	240	47	730

## School of Dentistry

Second Year	Fall Qtr		Winter Qtr		Spring Qtr		Total	
	Cr	Hrs	Cr	Hrs	Cr	Hrs	Cr	Hrs
DH 40-41-42 — Dental Health Education .....	2	50	2	50	2	50	6	150
DH 45-46-47 — Assisting in Dentistry .....	2	60	2	60	2	60	6	180
DH 53-54-55 — Dental Prophylaxis .....	2	60	2	60	2	60	6	180
DH 56 — General Pathology .....	1	10	.....	.....	.....	.....	1	10
DH 57-58-59 — Prosthetic Dentistry and Laboratory .....	2	40	2	40	2	40	6	120
DH 60 Oral Pathology and Histology .....	.....	.....	2	20	.....	.....	2	20
GC 2C — Psychology of Human Development .....	3	30	.....	.....	.....	.....	3	30
PubH 51 — Community Hygiene .....	.....	.....	3	30	.....	.....	3	30
PubH 95 — Human Nutrition .....	3	30	.....	.....	.....	.....	3	30
Soc 1 — Man in Modern Society .....	.....	.....	.....	.....	3	30	3	30
Spch 5 — Fundamentals of Speech .....	5	50	.....	.....	.....	.....	5	50
Phcl 1 — Dental Therapeutics .....	.....	.....	1	10	.....	.....	1	10
DH 35 — Dental Office Emergencies .....	.....	.....	1	10	.....	.....	1	10
DH 64 — Lectures in Periodontology .....	.....	.....	1	10	.....	.....	1	10
DH 63 — Dental Roentgenology Laboratory .....	.....	.....	.....	.....	1	20	1	20
DH 65 — Health Ecology .....	.....	.....	1	10	.....	.....	1	10
	20	330	17	300	12	260	49	890

## DESCRIPTION OF COURSES

### Dental Hygiene (DH)

#### Assistant Professor

Donna S. Aker, G.D.H., B.A., *director*

#### Instructor

Barbara J. Bartholdi, G.D.H.

#### Clinical Instructor

Stephanie L. Dort, G.D.H., B.S.

Carol A. Mason, G.D.H., M.S.

Patricia D. Sander, G.D.H., B.A.

Elizabeth M. Schendel, G.D.H., B.S.

7. **Dental Anatomy.** *Lectures:* Dental nomenclature; special attention to definition, combining and application of terms used in the various divisions of dentistry; study of all deciduous and permanent teeth including calcification, eruption, decalcification, and shedding; tooth form, function, stress, occlusion, and investing tissues; anomalies. *Laboratory:* Drawings and carvings of teeth. (4 cr; 20 lect and 60 lab hrs) Langsjoen and staff
- 21-22. **Dental Prophylaxis.** Lectures, demonstrations, and practice in scaling and polishing teeth; teaching of oral hygiene and home care of the mouth to patients. Work is introduced by practice on manikins followed by practice on patients in the dental clinic. (2 cr per qtr; 20 lect and 80 clin and lab hrs) Bartholdi and staff
35. **Dental Office Emergencies.** Consideration of first aid principles and their application to emergencies in a dental office. (1 cr; 10 lect hrs) Sander
- 40-41-42. **Dental Health Education.** Lecture and recitation course in the preparation of oral hygiene material for various ages, groups, and occasions. Includes critical analysis of dental literature, audio-visual aids, display and unit projects, and field work in the public schools and community programs. (2 cr per qtr;



*Dental Hygiene Student and Dental Student in Cooperative Program of Preventive Dentistry at State Hospital*

1 lect per wk, 6 field visits, project labs each qtr for 3 qtrs...total 150 hrs)  
Schendel

- 45-46-47. Assisting in Dentistry.** Lectures, demonstrations, and practical experience in surgical and dental assisting in operative dentistry, pedodontics, oral surgery, orthodontics, endodontics, periodontics, dental prosthetics, crown and bridge work, X-ray, and patient admissions. (2 cr per qtr; 180 clin hrs) Staff
- 53-54-55. Dental Prophylaxis.** (Continuation of DH 21-22) Patient recall, and topical fluoride technique. Teaching of oral hygiene is emphasized. Approximately 180 hours of actual practice on all types of clinical cases must be completed. (2 cr per qtr; 180 clin hrs) Bartholdi and staff
- 56. General Pathology.** Elementary discussion of general pathology including circulatory disturbances, inflammation, and tumors. Special consideration of selected diseases with reference to those affecting the oral cavity. (1 cr; 10 lect hrs) Gorlin and staff
- 57-58-59. Prosthetic Dentistry and Dental Laboratory.** *Prosthetic Dentistry: Lectures:* Instruments and materials used in dental prosthetics. *Laboratory:* Fundamentals of removable prosthetics laboratory techniques. *Dental Laboratory: Lectures:* Instruments and materials used in the various branches of dentistry in addition to removable prosthetics. *Laboratory:* Construction of indirect dies from various materials; wax patterns and castings made for all types of cavity preparations; manipulation of porcelain and plastics; soldering of contact; manipulation of synthetic porcelain and dental cements. (2-2-2 cr; 30 lect and 90 lab hrs; prereq 9) Staff
- 60. Oral Pathology and Histology.** Résumé of histology of teeth and oral tissues to provide a background for a more detailed discussion of the special pathology

## **School of Dentistry**

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of these tissues. Topics include: facial embryology, dental and periodontal development, dental caries, periodontal diseases, endodontics, and introduction to tumors of dental origin. (2 cr; 16 lect and 4 lab hrs) Gorlin and staff

62. **Dental Roentgenology.** Series of lectures on the application of Roentgen rays for dental diagnostic purposes. Includes the electrophysics of the apparatus, positioning of the films, angulation of the machine, and processing. (1 cr; 10 lect hrs) Petersen
63. **Dental Roentgenology Laboratory.** Series of laboratory demonstrations on the application of Roentgen rays for dental diagnostic purposes. Includes the electrophysics of the apparatus, positioning of the films, angulation of the machine, and processing. (1 cr; 20 lab hrs) Petersen
64. **Lectures in Periodontology.** A review of the anatomy, histology, and physiology of the supporting structures of the teeth; physiotherapy; classification, etiology, and treatment of periodontal diseases. (1 cr; 10 lect hrs) Folke and staff
65. **Health Ecology.** Lecture, discussion, group projects regarding health behavior of people in all socio-economic groups. Application of communication skills to identify cultural, psychological, social, environmental determinants of health behavior, and to plan and design educational programs. (1 cr; 10 lect hrs) Woodbury and staff

### **Anatomy (Anat)**

4. **Elementary Anatomy.** Human gross anatomy including a brief introduction to histology, followed by a more detailed study of the head and neck. Lectures, laboratory studies, and demonstrations. (4 cr; 30 lect and 20 lab hrs; prereq 1 qtr biology) Anatomy staff

### **Biochemistry (MdBc)**

30. **Elements of Biochemistry.** (a) Brief study of the physical and chemical laws of the composition of matter, chemical compounds, chemical and energy changes; ionic theory; gases and solutions. (b) Physiological chemistry of gases, water, salts, carbohydrates, fats, and proteins; nutritive media; digestive fluids and digestion; metabolism of excretion and excretory products. (4 cr; 40 lect hrs) Biochemistry staff

### **Biology (Biol)**

- 1-2. **General Biology.** Introduction to living things, both plant and animal, and to major biological concepts. Structure, function, classification, evolution of organisms. (5 cr per qtr; 60 lect and 120 lab hrs) Staff

### **English (Engl)**

- 1-2-3. **Freshman English.** A course in composition using literature as the reading material and the subject matter for composition. (3 cr per qtr; 90 hrs) Staff

### **Microbiology (MicB)**

1. **Elementary Microbiology.** Principles of microbiology; general survey of pathogenic bacteria, molds, protozoa, and viruses; elements of immunity; sanitary



analysis of water and milk; germicides; bacterial food poisoning. (4 cr; 30 lect and 30 lab hrs) Staff

### **Pharmacology (Phcl)**

1. **Dental Therapeutics.** Study of drugs relating to application in dental therapeutics. (1 cr; 10 lect hrs) Holte and staff

### **Physical Education (PEW)**

- 13A. **Posture and Individual Exercise.** Individually selected exercises for various purposes such as general muscle toning, correction of functional posture deviations, weight control, relaxation. (1 cr; 50 hrs) Staff

### **Physiology (Phsl)**

2. **Human Physiology.** Covers the following subjects from the standpoint of function of the human: circulation, respiration, digestion, excretion, metabolism and nutrition, special senses, nervous system, and endocrines. (4 cr; 30 lect and 20 dem hrs; prereq 1 qtr zoology or biology, 1 qtr chemistry) Staff

### **Psychology (Psy)**

- 1-2. **General Psychology.** General introduction to the study of human behavior with emphasis on the development of the individual. This course is advised, in place of 2C, for those who are considering a Bachelor's degree. (3 cr per qtr; 30 lect hrs per qtr) Staff

- GC 2C. **Psychology of Human Development.** Human behavior in terms of its origins and unfolding; introduction to the methods and techniques applicable to the scientific study of growth and development. Designed to provide an objective view of the complex individual as he functions in and interacts with a complex environment at various stages during the continuous process of physical and psychological development from conception through maturity. Special attention is given to the implications for the young adult of research findings in such major areas of interest as physical, emotional, personality, and social development. (3 cr; 30 lect hrs) Staff

### **Public Health (PubH)**

3. **Personal Health.** Normal body function; causes and prevention of disease. (2 cr; 20 lect hrs; not open to students who have taken GC 10C) Thomson
51. **Community Hygiene.** Community programs for disease control. (3 cr; 30 lect hrs; not open to students who have taken 4, 5, 50, or 100A; prereq 3) Schuman
95. **Human Nutrition.** Principles of nutrition, application to individual and family eating patterns, discussion of instructional aspects of selected community problems or programs. (3 cr; 30 lect hrs; prereq courses in chemistry and biology or #) Stief

**Sociology (Soc)**

1. **Man in Modern Society.** Characteristics of human group life. Analysis of factors associated with development of human group life and man's social environment; structure of the social environment and its influence upon the individual's behavior. (3 cr; 30 lect hrs) McNall and staff

**Speech (Spch)**

5. **Fundamentals of Speech.** Development of basic skills in speech; voice and action, oral reading, discussion, extemporaneous speaking. (5 cr; 50 lect hrs) Staff

# PROGRAM IN DENTAL ASSISTING

## GENERAL INFORMATION

The Program in Dental Assisting, established at the University of Minnesota in 1953, is offered jointly by the School of Dentistry and General College. The aim of the curriculum is to give training in the basic principles underlying the many duties of a dental assistant, with the objective that the student will adapt her knowledge to the needs of the dentist for whom she will be later employed. The program permits the student to accomplish three major objectives all in 1 year: (a) a general education, (b) supervised training as a dental assistant, (c) educational requirement for certification.

This program has been accorded full approval by the American Dental Association Council on Dental Education. Therefore, the successful completion of this course of study provides the educational requirement necessary to qualify for the national certification examination sponsored by the American Dental Assistants Association.

Credits earned during this year may be applied toward requirements for the 2-year associate in arts (A.A.) degree offered through General College. This additional year may be taken either before or after the year in dental assisting. If a 2-year program is preferred, it is suggested that students attend General College their first year on campus and spend their second year in the dental assisting program.

## Admission

Applicants for the Program in Dental Assisting will register in General College. Application blanks are available through the local high school of the applicant or from the Office of Admissions and Records, Morrill Hall, University of Minnesota, Minneapolis, Minnesota 55455. Admission is open to students who are graduates of an accredited high school or achieve satisfactory scores on special entrance examinations. Applicants will be accepted on the basis of interest and general suitability for the work. A personal interview must be arranged with the dental assisting office in the School of Dentistry before final acceptance into the program. A typing requirement must be met and all entering students will be tested for their typing ability. If the student does not qualify, GC 14A (Beginning Typing) and GC 14B (Intermediate Typing) are available as a means to meet the requirement. One year of high school biology, general science, and bookkeeping is advantageous for admission.

**Tuition** — Resident student, \$98 per quarter; nonresident student, \$280. The cost of books, uniforms, and special fees will be approximately \$185 per year. The *General Information Bulletin* may be obtained from the Office of Admissions and Records at the University. This bulletin gives additional information about fees, housing, and recreational facilities.

The Program in Dental Assisting will be scheduled as an 11-month course and classes of dental assisting must be taken in sequence. The starting date for each course may vary so it is advisable to contact the dental assisting office or the General College for specific information before submitting applications.

## School of Dentistry

### COURSE OF STUDY

	Cr	Hrs
<b>DENTAL ASSISTING CLASSES</b>		
DA 1A — Clinic Orientation .....	2	40
DA 1 — Oral Anatomy and Biomaterials .....	2	40
DA 2 — Chairside Assisting .....	1	10
DA 3 — Clinic I .....	6	190
DA 4 — Microbiology .....	1	10
DA 5 — Oral Pathology .....	1	10
DA 6 — Prosthetics Laboratory .....	2	40
DA 7 — Clinic II .....	9	270
DA 8 — Dental Therapeutics .....	1	10
DA 9 — Dental Radiography .....	1	10
DA 10 — Practice Management .....	1	10
DA 11 — Clinic III .....	9	270
DA 12 — Seminar .....	1	15
DA 14 — Seminar .....	1	15
<b>GENERAL COLLEGE CLASSES</b>		
GC 2C — Psychology of Human Development .....	3	30
GC 10A — Principles of Biology .....	5	50
GC 10B — The Human Body .....	5	50
GC 31A — Writing Laboratory: Personal Writing .....	3	40
GC 31B — Writing Laboratory: Organizing Ideas .....	3	40
GC 31D — Writing Laboratory: Business Writing .....	3	40
GC 32A — Oral Communication: Basic Principles .....	3	30
GC 16A — Accounting Fundamentals .....	3	40
	66	1,260

### DESCRIPTION OF COURSES

#### Dental Assisting (DA)

*Assistant Professor*

Helen M. Tuchner, B.A., *director*

- 1A. **Orientation to Clinical Procedures.** Use of dental materials, instruments, and equipment. Basic study of dental services rendered in clinical situations. (2 cr; 10 lect and 30 lab hrs) Tuchner and staff
1. **Oral Anatomy and Biomaterials.** Study of bones, muscles, glands of head and neck. Identification, development, and anatomical description of teeth. Classification and use of impression materials. Technics of investing and casting. (2 cr; 10 lect and 30 lab hrs) Hampel and staff
2. **Chairside Assisting.** Psychology of dealing with children and adult patients, preparation of the patient for dental operations. Methods of assisting in operative procedures. Care of the office and dental equipment. (1 cr; 10 lect hrs)
3. **Clinic I.** Assistant students will be assigned to assist a senior dental student in the various clinical areas of the School of Dentistry. All phases of chairside assisting will be part of the clinical experience. (6 cr; 190 hrs)
4. **Microbiology.** Morphology, cultural characteristics, and laboratory differentiation of oral bacteria and viruses. Types and uses of disinfecting agents, methods of sterilization. (1 cr; 10 lect hrs)



*Dental Assistant Helping Junior Student  
in Operative Dentistry Clinic*

5. **Oral Pathology.** Oral and dental anomalies, and classification of cavities. Diseases of the oral mucosa and periodontal tissue. Oral pathology and physiology of teeth. (1 cr; 10 lect hrs)
6. **Prosthetic Laboratory.** Properties and uses of impression materials. Basic prosthetic techniques. (2 cr; 10 lect and 30 lab hrs) Staff
7. **Clinic II.** Clinical assignments — follows DA 3. (9 cr; 270 clin hrs) Tuchner and staff
8. **Dental Therapeutics for Dental Assistants and Hygienists.** Lecture and laboratory study of drugs relating to their application in dental therapeutics. (1 cr; 10 lect hrs) Holte
9. **Dental Radiography.** Indications and preparation of X-ray examinations. Types of machines and techniques of operation. Types, sizes, uses, and processing of films. (1 cr; 10 lect hrs) Petersen
10. **Office Management.** Reception of patients, use of the telephone, arranging appointments, keeping office records, fees and collections, purchasing supplies. (1 cr; 10 lect hrs)
11. **Clinic III.** Clinical assignments — follows DA 7. (9 cr; 270 hrs) Tuchner and staff
12. **Seminar: Dental Assisting.** Correlated series of lectures based on the clinical approach of the dental assistant to the various fields of dentistry. Lectures as assigned. (1 cr; 15 lect hrs) Staff
14. **Seminar: Dental Assisting.** Series of lectures to follow in sequence DA 12. (1 cr; 15 lect hrs) Staff

**General College (GC)**

- 2C. Psychology of Human Development.** Human behavior in terms of its origins and unfolding; introduction to the methods and techniques applicable to the scientific study of growth and development. Designed to provide an objective view of the complex individual as he functions in and interacts with a complex environment at various stages during the continuous process of physical and psychological development from conception through maturity. Special attention is given to the implications for the young adult of research findings in such major areas of interest as physical, emotional, personality, and social developments. (3 cr; 30 lect hrs)
- 10A. Principles of Biology.** A study of the variety and relationships of living organisms illustrates the general principles of biology as they apply to man, animals, and plants. These principles are drawn from fields such as the study of cells, relationships of organisms in nature, heredity, chemical and physical properties of living organisms, evolution, and reproduction. Films and demonstration laboratories supplement the lectures. (5 cr; 50 lect hrs)
- 10B. The Human Body: Structure, Function, Health.** Problems of physical, mental, and social health are related to the structure, function, and needs of the human body. The anatomy and physiology of the systems which constitute the human organism are studied. In studying the heart, for example, the instructor shows what it is, how it works, its importance to the overall functioning of the body, what can go wrong with it, and summarizes what is known about keeping it on the job. (5 cr; 50 lect hrs)
- 16A. Accounting Fundamentals.** In this introduction to accounting principles, the student works on the recording of business transactions, special journals,



*Dental Assistant and Dental Student Assisting Faculty Member  
in Oral Surgery Demonstration*

accounts and the ledger, financial statements, and summarizing at the close of the fiscal period, with emphasis on the single proprietorship. The course also serves to develop basic skills in keeping records for those students who may not pursue careers in business. (3 cr; 40 lect and lab hrs)

- 31A. Writing Laboratory: Personal Writing.** To increase his awareness of himself, his surroundings, and his relationships with his friends and his family, the student reads and writes descriptions, character sketches, and autobiographic and biographic narratives. He is encouraged to write clear, correct, and effective sentences and to overcome his own writing difficulties. He also learns about the dictionary and its resources, and briefly studies the history and development of language and its levels of usage and style. (3 cr; 40 lect and lab hrs)
- 31B. Writing Laboratory: Organizing Ideas.** The student learns two things: how to organize ideas clearly and effectively in expository writing, and how to read at the level of comprehension required for success in university courses. He learns to detect central ideas and discover supporting details in a piece of prose and to utilize such patterns of organization in his own factual writing. The reading also develops his vocabulary. He writes summaries, outlines, and various pieces of expository writing. (3 cr; 40 lect and lab hrs; prereq 31A)
- 31D. Writing Laboratory: Business Writing.** The student practices the writing of letters necessary for ordinary business transactions, such as letters of inquiry, order, complaint, adjustment, and application. Assignments stress acceptable business-letter form, clarity and economy of expression, and suitable tone. Final drafts of letters must be typed. (3 cr; 40 lect and lab hrs; prereq 31A... 31B advised)
- 32A. Oral Communication: Basic Principles.** The student is introduced to the basic principles of speech. By means of such assignments as an introduction, a demonstration, an argument, and a group discussion, he is given an opportunity to apply these principles. Through these classroom projects the student is helped to develop confidence in himself, to express his ideas clearly and effectively, and to listen critically. (3 cr; 30 lect hrs)

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## UNIVERSITY OF MINNESOTA HEALTH SCIENCES CENTER AND ADJACENT FACILITIES

1. School of Dentistry (Owre Hall)
2. Basic Medical Sciences
3. College of Medical Sciences
4. Mayo Auditorium
5. Main University Hospitals
6. Heart Hospital
7. Coffman Memorial Student Union
8. Comstock Hall for Women
9. Powell Hall for Nurses
10. Biomedical Library
11. Men's Dormitories
12. Pioneer Hall for Men and Women

