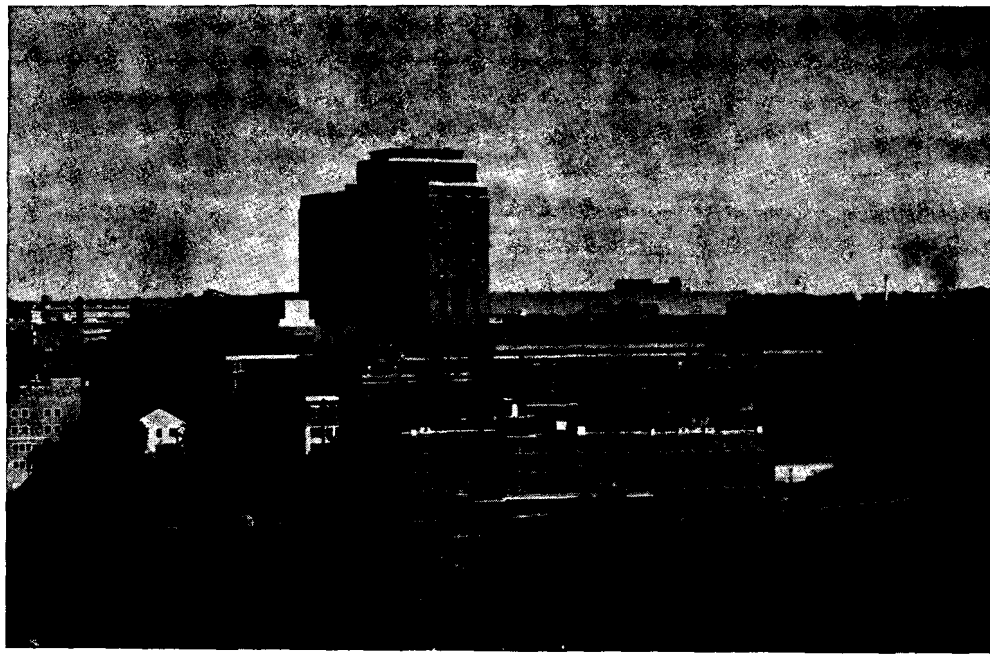


1956-58

Bulletin of the
UNIVERSITY OF MINNESOTA



School of Public Health 1956-1958

UNIVERSITY OF MINNESOTA

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Public Health Engineering and Sanitation

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 Richard G. Bond, M.S., M.P.H., Associate Professor; Public Health Engineer, University Health Service
 George S. Michaelsen, B.Ch.E., M.S., Associate Professor; Industrial Health Engineer, University Health Service
 John Morris, B.A., Instructor; Safety Supervisor, University Health Service
 Hugh D. Putnam, B.S., Instructor
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 Harvey G. Rogers, Lecturer; Chief, Section of Water Pollution Control, Minnesota Department of Health
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 Lyle Smith, B.S., M.S., Lecturer; Public Health Engineer, Section of Water Pollution Control, Minnesota Department of Health
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Public Health Nursing

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 Nora Cline, R.N., B.S., M.L., Assistant Professor
 Evelyn Sanburn, R.N., B.S., M.P.H., Assistant Professor
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 Margaret A. Gaddy, R.N., B.S., Lecturer; Industrial Nursing Consultant, Minnesota Department of Health
 Heidi Henriksen, R.N., B.S., M.P.H., Lecturer; Industrial Nursing Consultant, Minnesota Department of Health
 Helen Schulberg, R.N., B.S., M.P.H., Lecturer; Nursing Education Consultant, Minnesota Department of Health
 Ruth Stief, B.S., M.P.H., Lecturer; Nutrition Consultant, Minnesota Department of Health
 Jane B. Taylor, R.N., B.S., M.P.H., Lecturer; Executive Director, Combined Nursing Service of Minneapolis Health Department and Visiting Nurse Service, Minneapolis
 Alberta Wilson, R.N., B.S., M.S., Lecturer; Chief, Section of Public Health Nursing, Minnesota Department of Health

Health Education

Ruth E. Grout, Ph.D., M.P.H., Professor
 Betty W. Bond, B.S., M.P.H., Ph.D., Lecturer; Consultant in Health Education,
 Minnesota Department of Health
 Marie E. Ford, B.S., M.P.H., Lecturer; Chief, Section of Health Education,
 Minnesota Department of Health
 Clare Gates, Dr.P.H., Lecturer; Director, Health and Medical Care Division,
 Community Welfare Council of Hennepin County, Minneapolis
 Helen Starr, Ph.D., Lecturer; Director, Health, Physical Education, and Rec-
 reation, Minneapolis Public Schools

Personal Health

Stewart C. Thomson, M.S., M.D., M.P.H., Professor
 Donald W. Cowan, M.D., M.S., Associate Professor; Assistant Director, Univer-
 sity Health Service
 John E. Eichenlaub, M.D., Associate Professor
 Murray B. Bates, M.S., M.D., Assistant Professor
 Phillip D. Kernan, M.D., Assistant Professor

Biostatistics

Alan E. Treloar, Ph.D., Professor
 Jacob E. Bearman, M.A., Ph.D., Associate Professor
 Byron W. Brown, M.A., Instructor
 Eugene Johnson, M.A., Instructor

Laboratory of Physiological Hygiene

Ancel Keys, Ph.D., Professor; Director, Laboratory of Physiological Hygiene
 Josef M. Brozek, Ph.D., Professor
 Henry L. Taylor, Ph.D., Professor
 Joseph T. Anderson, Ph.D., Associate Professor
 Francisco Grande, M.D., Associate Professor
 Ernst Simonson, M.D., Associate Professor

Hospital Administration

James A. Hamilton, M.C.S., Professor; Director, Course in Hospital Adminis-
 tration
 Ray M. Amberg, Ph.C., Professor; Superintendent, University of Minnesota
 Hospitals
 James W. Stephan, M.B.S., Professor; Associate Director, Course in Hospital
 Administration
 Arthur G. Hennings, B.B.A., M.H.A., Assistant Professor
 Edith M. Lentz, M.A., Ph.D., Assistant Professor
 Ruth H. Inghram, B.S., M.H.A., Instructor
 Robert Bachmeyer, B.A., M.B.S., Lecturer; Administrator, St. Barnabas Hos-
 pital, Minneapolis
 Jerome T. Bieter, B.A., M.H.A., Lecturer
 Frank R. Briggs, B.A., Lecturer; Administrator, Abbott Hospital, Minneapolis
 F. Hazen Dick, Lecturer
 Oren Govier, B.A., M.H.A., Lecturer
 Kenneth J. Holmquist, M.A., Lecturer; Superintendent, Bethesda Hospital,
 St. Paul
 A. Douglas Kincaid, Jr., B.A., Lecturer
 Helen M. Knudsen, M.D., M.P.H., Lecturer; Chief, Section of Hospital Services,
 Minnesota Department of Health
 Harold Mickey, B.B.A., Lecturer; Administrator, Methodist Hospital, Rochester
 Russell Nye, B.S., M.B.A., Lecturer; Administrator, Northwestern Hospital,
 Minneapolis

- Telmer O. Peterson, B.S., M.H.A., Lecturer; President, Northern Pacific Beneficial Association
- Boyd A. Sanderson, B.S., M.H.A., Lecturer
- Raymond K. Swanson, B.S., Lecturer; Superintendent, Swedish Hospital, Minneapolis
- J. Milo Anderson, B.A., M.B.A., Clinical Preceptor; Administrator, Strong Memorial Hospital, Rochester, New York
- Miriam Curtis, R.N., Clinical Preceptor; Administrator, Syracuse Memorial Hospital, Syracuse, New York
- Marie J. Doud, Clinical Preceptor; Administrator, Highland Hospital, Rochester, New York
- Richard E. Fox, Clinical Preceptor; Superintendent, St. Luke's Hospital, Duluth
- Frank S. Groner, B.A., LL.D., Clinical Preceptor; Administrator, Baptist Memorial Hospital, Memphis, Tennessee
- Merton E. Knisely, A.A., Clinical Preceptor; Administrator, St. Luke's Hospital, Milwaukee, Wisconsin
- Carl C. Lamley, M.B.S., Clinical Preceptor; Executive Director, Stormont-Vail Hospital, Topeka, Kansas
- Benjamin W. Mandelstam, M.D., Clinical Preceptor; Administrator, Mount Sinai Hospital, Minneapolis
- Robert A. Molgren, B.A., M.H.A., Clinical Preceptor; Administrator, University of Kansas Medical Center, Kansas City, Kansas
- Russell A. Nelson, M.D., Clinical Preceptor; Director, Johns Hopkins Hospital, Baltimore, Maryland
- David E. Olsson, B.S., M.H.A., Clinical Preceptor; Administrator, San Jose Hospital, San Jose, California
- Carl N. Platou, B.A., M.H.A., Clinical Preceptor; Administrator, Fairview Hospital, Minneapolis
- Boone Powell, M.H.A., Clinical Preceptor; Administrator, Baylor University Hospital, Dallas, Texas
- Oliver G. Pratt, B.S., Clinical Preceptor; Executive Director, Rhode Island Hospital, Providence, Rhode Island
- William H. Wallace, B.A., M.H.A., Clinical Preceptor; Administrator, The Charles T. Miller Hospital, St. Paul

Field Associates

- Pearl H. Ahrenkiel, R.N., B.S., Educational Director, Division of Public Health Nursing, State Department of Health, Springfield, Illinois
- Dorothy Anderson, R.N., B.S., M.P.H., Supervising Nurse, Rochester-Olmsted County Health Unit, Rochester
- Mattie Brass, R.N., B.S., M.P.H., Director, Division of Public Health Nursing, Iowa State Department of Health, Des Moines
- Franklin Brough, M.P.H., Director, Public Health Education, Wichita-Sedgwick County Department of Health, Wichita, Kansas
- Helene Buker, R.N., M.A., Chief, Public Health Nursing Section, Michigan Department of Health, Lansing, Michigan
- Maude B. Carson, R.N., B.S., Chief, Division of Public Health Nursing, State Department of Health, Springfield, Illinois
- Eunice Claus, R.N., B.S., M.P.H., Director of Nursing and Health Education, Du Page County Health Department, Wheaton, Illinois
- Mary Graupman, R.N., B.S., Assistant Supervising Nurse, Rochester-Olmsted County Health Unit, Rochester
- Margaret Griffin, R.N., B.S., Educational Consultant, Family Nursing Service, St. Paul
- Ann Hauser, R.N., B.S., Director, Public Health Nursing, Will County Health Department, Joliet, Illinois
- Ann W. Haynes, M.P.H., Chief, Bureau of Health Education, California Department of Public Health, Berkeley, California
- Alma Hovde, R.N., B.S., Director, Rural Hennepin County Nursing District, Minneapolis
- Portia Irick, R.N., B.S., Director, Division of Public Health Nursing, State Department of Health, Santa Fe, New Mexico

- Janet Jennings, R.N., B.S., Director, Bureau of Public Health Nursing, State Board of Health, Madison, Wisconsin
- Vera Lundstrom, R.N., B.S., Supervisor, Rural Hennepin County Nursing District, Minneapolis
- Thelma Luther, R.N., B.S., M.P.H., Educational Director, Division of Public Health Nursing, Iowa State Department of Health, Des Moines
- Levitte B. Mendel, M.P.H., Director of Health Education, Department of Health and Hospitals, Denver, Colorado
- Bessie Morse, R.N., B.A., Supervisor, Public Health Nursing, Albuquerque-Bernalillo County Health Department, Albuquerque, New Mexico
- Ione Rowley, R.N., B.S., Assistant Director, Bureau of Public Health Nursing, State Board of Health, Madison, Wisconsin
- Lidwina Suek, R.N., B.S., M.P.H., Acting Chief Nurse, Health Service, Minneapolis Public Schools
- Margaret Todt, R.N., B.S., M.A., Educational Supervisor, Combined Nursing Service, Minneapolis
- Eunice Vandervoort, R.N., B.A., Supervisor, Public Health Nursing, Santa Fe County Health Department, Santa Fe, New Mexico
- Rona Whelan, R.N., B.S., M.P.H., Nursing Consultant, Public Health Nursing Section, Michigan Department of Health, Lansing, Michigan

Special Lecturers, 1954-56

- Ernst L. Abramson, M.D., Director, National Institute of Public Health, Sweden
- Margaret Aldrich, R.N., Director of Nursing Service, American Red Cross, Hennepin County Chapter, Minneapolis
- Amos J. Alter, Chief, Section of Sanitation and Engineering, Alaska Department of Health, Juneau, Alaska
- Benjamin Arnold, Sanitarian, Milk Inspection Section, Division of Public Health, Minneapolis
- Clayton Bach, M.S., Superintendent of Water Treatment, Minneapolis Water Works Department
- Blaine B. Barker, Jr., B.C.E., Assistant Public Health Engineer, Minnesota Department of Health
- Norman D. Begg, M.D., Director, Regional Office for Europe, World Health Organization, Geneva, Switzerland
- O. E. Brownell, C.E., Chief, Section of Municipal Water Supplies, Minnesota Department of Health
- Herman N. Bundesen, M.D., President, Board of Health, Chicago, Illinois
- Robert P. Burden, Sc.D., Division of Medicine and Public Health, Rockefeller Foundation, New York, New York
- Angus Campbell, Ph.D., Director, Survey Research Center, Institute for Social Research, University of Michigan, Ann Arbor, Michigan
- Cecilia Conrath, Regional Consultant in Health Education, U.S. Public Health Service, Kansas City, Missouri
- Carl Eklund, M.D., Medical Director, National Microbiological Institute, Rocky Mountain Laboratory, Hamilton, Montana
- Harold M. Erickson, M.D., State Health Officer, Oregon State Board of Health, Portland, Oregon
- Ruth B. Freeman, M.S., D.Ed., Associate Professor, Public Health Administration, Johns Hopkins School of Hygiene and Public Health, Baltimore, Maryland
- Franz Goldmann, M.D., Associate Professor of Medical Care, School of Public Health, Harvard University, Boston, Massachusetts
- Carlos L. Gonzales, M.D., Dr.P.H., Assistant Director, Pan American Sanitary Bureau, Washington, D.C.
- Alvin L. Gorby, Major General, MC, Deputy Commander, Walter Reed Army Medical Center, Washington, D.C.
- Armi Hallsten-Kallia, Executive Secretary, World Health Organization for Finland, Helsinki, Finland
- John J. Hanlon, M.D., M.P.H., Chief, Public Health Division, International Cooperation Administration, Washington, D.C.
- Harry G. Hanson, Director, Robert A. Taft Sanitary Engineering Center, U.S. Public Health Service, Cincinnati, Ohio

- Genevieve D. Harkin, Ed.D., Associate, Health Education Service, National Tuberculosis Association, New York, New York
- Neola Henson, M.P.H., Health Educator, Rochester-Olmsted County Health Unit, Rochester
- Robert J. Hohman, M.P.H., Executive Director, United Cerebral Palsy of Minnesota, Minneapolis
- Thomas R. Hood, M.D., Executive Secretary, Kansas State Board of Health, Topeka, Kansas
- Malcolm C. Hope, M.S., M.P.H., Chief, General Engineering Program, Division of Sanitary Engineering Services, U.S. Public Health Service, Washington, D.C.
- Philip C. Hoyer, Health Educator, Minnesota Department of Health
- Paul W. Kabler, Ph.D., M.D., M.P.H., Chief, Bacteriology Section, Robert A. Taft Sanitary Engineering Center, U.S. Public Health Service, Cincinnati, Ohio
- Martin Kaplan, V.M.D., M.P.H., Chief, Veterinary Public Health Officer, World Health Organization, Geneva, Switzerland
- W. C. Kernkamp, Bureau of Environmental Hygiene, City Health Department, Minneapolis
- Morton Kramer, D.Sc., Chief, Biometrics Branch, National Institute of Mental Health, Bethesda, Maryland
- Alexander Langmuir, M.D., M.P.H., Chief, Epidemiologic Services, Communicable Disease Center, Atlanta, Georgia
- John A. Logan, D.Sc., Chairman, Department of Civil Engineering, Institute of Technology, Northwestern University, Evanston, Illinois
- Robert B. Mellins, M.D., Assistant Surgeon, U.S. Public Health Service, in charge of Chicago Child Poisoning Control Program, Chicago, Illinois
- Levitte B. Mendel, M.P.H., Director of Health Education, Department of Health and Hospitals, Denver, Colorado
- Kerwin L. Mick, M.S., Chief Engineer, Minneapolis-St. Paul Sanitary District, St. Paul
- Carl N. Neupert, M.D., State Health Officer, State Board of Health, Madison, Wisconsin
- Dorothy B. Nyswander, Ph.D., Professor, Public Health Education, School of Public Health, University of California, Berkeley, California
- Leonard G. Sinton, Supervisor, Milk Inspection Section, City Health Department, Minneapolis
- Donald L. Snow, M.S., Chief, Sanitary Engineering Branch, National Institutes of Health, Bethesda, Maryland
- Fred L. Soper, M.D., Dr.P.H., Director, Pan American Sanitary Bureau, Regional Office of the World Health Organization, Washington, D.C.
- James H. Steele, D.V.M., Chief, Veterinary Public Health Service, Communicable Disease Center, U.S. Public Health Service, Atlanta, Georgia
- William H. Stewart, M.D., Chief, Heart Disease Control Program, U.S. Public Health Service, Washington, D.C.
- E. Glen Wagner, M.S., Chief Engineer and Deputy Chief of Field Party, Institute of Inter-American Affairs, Brazil
- Helen M. Wallace, M.D., Professor of Preventive Medicine, Medical College of New York, New York
- Netta Wilson, M.A., Public Relations Consultant, Minnesota Department of Health

Special Lecturers in Hospital Administration

- Kenneth B. Babcock, M.D., Director, Joint Commission on Accreditation of Hospitals, Chicago, Illinois
- George Bugbee, President, Health Information Foundation, New York, New York
- Arthur M. Calvin, Executive Director, Minnesota Medical Service, Inc., and Minnesota Health Service Association, St. Paul
- Dean Conley, Executive Secretary, American College of Hospital Administrators, Chicago, Illinois
- Thomas Cook, Executive Secretary, Hennepin County Medical Society, Minneapolis

- Edwin L. Crosby, M.D., Executive Director, American Hospital Association, Chicago, Illinois
- Paul M. Densen, D.Sc., Director, Division of Research and Statistics, Health Insurance Plan of Greater New York, New York
- Franz Goldman, M.D., Associate Professor of Medical Care, Harvard University School of Public Health, Boston, Massachusetts
- Mrs. Russell Hanson, President, Hospital Auxiliary, Benson
- Warren B. Hempstead, Sales Manager, Physicians' and Hospitals' Supply Company, Inc., Minneapolis
- Vane M. Hoge, M.D., Assistant Surgeon General, U.S. Public Health Service, Washington, D.C.
- Roy Johnson, American Hospital Supply Company, Evanston, Illinois
- Victor Johnson, M.D., Director, Mayo Foundation, Rochester
- Perrie Jones, Librarian, St. Paul
- Ronald A. Jydstrup, M.H.A., Director, Blue Cross Plan, Fargo, North Dakota
- Miland E. Knapp, M.D., Clinical Professor of Physical Medicine
- Carl Lamley, Executive Director, Stormont-Vail Hospital, Topeka, Kansas
- Lucile Petry Leone, Chief Nurse Officer, Department of Health, Education and Welfare, U.S. Public Health Service, Washington, D.C.
- Lee Loevinger, Attorney at Law, Minneapolis
- Frederick H. Lott, M.D., Pathologist, Northwestern Hospital, Minneapolis
- Benjamin Mandelstam, M.D., Director, Mount Sinai Hospital, Minneapolis
- John R. Mannix, Director, Cleveland Hospital Service Association, Cleveland, Ohio
- Jack Masur, M.D., Assistant Surgeon General, U.S. Public Health Service, Washington, D.C.
- Mabel Mathias, Director of Nutrition, Northwestern Hospital, Minneapolis
- Fred A. McNamara, Bureau of the Budget, Washington, D.C.
- J. P. Medelman, M.D., Radiologist, St. Paul
- Maurice J. Norby, Deputy Director, American Hospital Association, Chicago, Illinois
- Andrew Pattullo, Director, Hospital Division, W. K. Kellogg Foundation, Battle Creek, Michigan
- Oliver G. Pratt, Executive Director, Rhode Island General Hospital, Providence, Rhode Island
- Warren Soderberg, Chief Engineer, Fairview Hospital, Minneapolis
- Glenn V. Taylor, Executive Secretary, Minnesota Hospital Association, Minneapolis
- W. H. Tusler, Magney, Tusler and Setter, Architects and Engineers, Minneapolis
- George G. Ulmer, Jr., President, Physicians' and Hospitals' Supply Company, Inc., Minneapolis
- William N. Wallace, M.H.A., Administrator, Charles T. Miller Hospital, St. Paul
- Howard M. Winholtz, M.H.A., Clinic Manager, Worthington Clinic, Worthington
- Donald E. Wood, M.H.A., Executive Secretary, Association of Twin City Hospitals, St. Paul

School of Public Health

GENERAL INFORMATION

The School of Public Health offers a wide selection of general and professional courses in the field of preventive medicine and public health. The general courses are designed for the student who desires some knowledge of personal health and an understanding of the community program that exists 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 preventive medicine and public health 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. Curriculums for 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 a School of Public Health.

The School is accredited by the American Public Health Association for work leading to the degrees of master of public health and master of science (with major in health education). The program of study in public health nursing is accredited by the Accrediting Service of the National League for Nursing.

The School occupies two and a half floors of the new 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. The Laboratory of Physiological Hygiene is separately situated at the Memorial Stadium only 3 blocks distant.

The teaching programs have been developed in close collaboration with other departments in the 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 likewise share in teaching responsibilities. The City-County Health Unit at Rochester, Minnesota, has been developed with the assistance of the Kellogg Foundation as a field training area.

Supervised field training is also available through co-operation of public health agencies elsewhere in Minnesota and in other states.

Professional Training Courses in Public Health—The School of Public Health provides courses for the training of health officers, public health engineers, public health nurses, public health educators, public health veterinarians, vital statisticians, and hospital administrators. Arrangements can also be made for special courses of study for other persons with professional training and public health experience, notably dentists, sanitarians, and laboratory personnel.

The program of study emphasizes training of a co-ordinated team of professional workers, each member of which has some understanding and appreciation of the contributions which each of the disciplines makes to the broad field of public health. To this end, all students pursuing courses leading to an advanced degree in public health are required to take basic courses in public health administration, epidemiology, statistics, sanitation, public health nursing, and health education. To this nucleus of required courses, which so far as possible all advanced students take together, each of the professional groups adds elective courses from its respective field of special interest.

The programs of study are arranged as orderly sequences of courses extending over at least 1 academic year (3 university quarters) of post-graduate work. Several of the programs extend beyond 3 quarters in order to provide field work. In all cases the student should plan to begin work in a fall quarter.

Training 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 1 year of academic study, supplemented by a year of supervised practical experience. The academic year combines specialized instruction in hospital administration and basic courses in the fundamentals of public health. See page 22 for details.

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 fatigue, nutrition, physiology of exercise, developmental physiology and biochemistry, psychosomatics, performance, and problems of metabolism. Facilities and personnel are specialized for experimental studies on man. Programs of study are available which may lead to the degree of master of science or doctor of philosophy.

Summer Session—The Summer Session at the University of Minnesota consists of 2 terms, each of 5 weeks. In each of these terms are concentrated certain courses that are spread over 1 or 2 quarters during the regular year. Although the offerings for the Summer Session vary somewhat from year to year, they are planned to make some of the important fundamental courses available each year, with variation as to the supplemental courses. Special workshops lasting 2 or 3 weeks are offered during some summers.

In-Service Training Courses—Noncredit, in-service training courses are offered at the Center for Continuation Study through the co-operation of the School of Public Health and the Department of Continuation Medical Education. These courses vary in length from 3 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.

ADMISSION

Graduate Program—Those who wish to become candidates for the degrees of master of public health or master of hospital administration should apply for admission to the School of Public Health. Application blanks will be furnished by the School upon request. A certified transcript attesting to the applicant's college record and his graduation must be submitted with the application. After the application and supporting papers have been received, applicants will be notified of action taken.

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

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

Undergraduate Program—Students studying for the degree of bachelor of science with a major in public health nursing or for the certificate or basic program in public health nursing should apply for admission to the School of Public Health but should request application blanks directly from the Office of Admissions and Records. (See pages 16-17.)

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.

Credits earned as Adult Special students will count toward the appropriate degree when the student is transferred to degree candidacy. 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.

Transfer of Credits—Transfer of not more than 9 credits earned at other universities may be approved for candidates for Master's degrees, but this does not shorten the minimum residency requirements of 3 academic quarters.

Student Orientation—Those entering during the fall quarter are eligible to take advantage of New Students' Week activities. The *Moccasin*, new students' handbook, may be secured from the Office of Admissions and Records. Students are particularly urged to attend the lectures on the library, tour of the library, and lectures on "How to Study." Students who have not been in school for several years are urged to take the course Personal Orientation.

DEGREES AND CERTIFICATES

Doctor of Philosophy—A program of study and research leading to the doctor of philosophy degree may be elected with a major in public health, in biostatistics, or in physiological hygiene. Entrance upon work for this degree with a major in public health will be limited to those who have already completed a Master's degree or the equivalent in public health or related fields. A major in biostatistics may be elected by those whose chief interests center in statistical theories and their application to biological fields. Similarly a major in physiological hygiene may be elected by qualified students in that field.

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 *Bulletin of the Graduate School*.

The University of Minnesota does not grant a doctor of public health degree.

Master of Science—This degree is available under two plans, the one involving preparation of a thesis plus a minimum of course work, and the other embracing more extended course work and the formulation of brief reports in place of a 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 biostatistics, or in physiological hygiene. For detailed information, see the *Bulletin of the Graduate School*.

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. The following are eligible for admission:

"a. Holders of the degree of M.D., D.D.S., or D.V.M., or equivalent degree from an acceptable institution; or

"b. Holders of the Bachelor's Degree with adequate preparation in the sciences basic to public health, and also qualified in some professional capacity to pursue education in public health.

"The latter qualifications may normally be fulfilled either by

"x. professional academic qualifications in engineering, public health nursing, education, or some other field of public health representing the equivalent of at least one year of academic work in addition to the completion of a four years' course leading to the Bachelor's Degree;

"y. or experience (normally not less than three years) in some field of public health practice or in teaching of a type acceptable to the school."

Those who do not meet the experience requirement outlined above are advised to become candidates for the master of science degree as set forth above.

All candidates for the master of public health degree must complete a program of at least 3 quarters 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 training for each candidate should include courses in public health administration, epidemiology, sanitation, public health nursing, health education, and vital statistics. The courses selected must have the approval of the student's adviser. A grade average of not less than 1.5 (based on: A = 3, B = 2, C = 1) must be attained, including a grade average of 1.5 in all public health courses so graded and in these 6 basic courses. Papers of the quality, though not the scope, of a Master's thesis must be prepared in 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 22.

Bachelor of Science—

1. *Major in Public Health Nursing*—A total of 180 credits in approved courses is required; the usual course load is 15 credits per quarter. The student must maintain a satisfactory academic standing and may not graduate with less than a 1.0 grade average in all work as well as a 1.0 average in the major sequence. For every 5 honor points in excess of

1 honor point per credit (A = 3, B = 2, C = 1), the credit hours required for graduation are diminished by 1, but the student must complete all required courses.

In assigning course credits, it is assumed that the average student will spend 3 hours per week for each 1 credit. As an example, a 3-credit course might have 3 hours of lecture per week; it would be assumed that the student would spend another 6 hours per week in reading and other preparation. Laboratory courses which require more hours in class have a corresponding decrease in the amount of outside preparation.

At least 3 quarters in residence are required and at least 2 of these must be in the senior year. Basic courses in public health theory must be taken at the University of Minnesota. If more than 5 years have elapsed between completion of such courses and earning of the degree, the student's program will be re-evaluated to determine the desirability of repetition.

2. *Major in Biostatistics*—Registration for courses leading to bachelor of science degree with a major in biostatistics is in the College of Science, Literature, and the 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.

Certificate in Public Health Nursing—Beginning with the school year 1956-57, the certificate in public health nursing will be granted only to students who have a Bachelor's degree at the time of enrollment in the public health nursing program. Such students who have received the Bachelor's degree in any field from an approved institution and who have been graduated from an accredited school of nursing may become candidates for the certificate by enrolling for the courses included in the public health nursing major. Students who have had the equivalent of a certain required course in another institution as part of a sequence in nursing or another special field may transfer certain credits subject to faculty approval.

A student with a Bachelor's degree but no previous theory or practice in public health nursing must earn 45 credits in order to qualify for the certificate. Students who have a Bachelor's degree and have had theory and/or experience in public health nursing may have, under individual consideration, the amount of required credit reduced by faculty action. In all cases, 30 credits, including basic courses in theory, must be taken at the University of Minnesota and an honor point average of 1.0 maintained. Students who have less than 30 credits at the University of Minnesota plus approved transfer credit from other institutions are not eligible for the certificate but may receive a statement testifying to equivalent preparation in public health nursing.

EXPENSES

1. Tuition fee per quarter **	
Resident (full schedule)	\$ 46.00
Nonresident (full schedule)	135.00
Resident, per credit hour	4.00
Nonresident, per credit hour	11.25
2. Matriculation deposit	5.00
3. Incidental fee per quarter **	15.00
4. Special course fees are charged in addition to the regular tuition as follows:	
Pub.H. 169, 190	100.00

** If a student receives a stipend under the terms of the Social Security Act the University recorder should receive official authorization from the State Department of Health as to the payment of University fees before time of registration. The tuition amounts indicated are for registration in the School of Public Health. For tuition rates for other colleges, the *Bulletin of General Information* should be consulted.

The University year, extending from October to June, is divided into 3 terms called quarters. On the specified dates (see Calendar in *Bulletin of General Information*) prior to the opening of each quarter, the following fees are due from each student: (a) tuition, (b) incidental, and (c) such special fees and deposits as may be required. Payment of fees cannot be deferred.

RESIDENCE ACCOMMODATIONS

Most out-of-town students live either in University-maintained residence halls or in private rooming houses. All such students must live in University-approved residences, under substantially the same obligations. Information concerning residence halls may be obtained from the Director of Women's Residences at Comstock Hall, from the Director of Centennial Hall (for men), or from the Student Housing Bureau at 209 Eddy Hall.

Information about private rooming houses may be obtained from the Student Housing Bureau.

FURTHER INFORMATION

For further details regarding admission, expenses, housing facilities, health service, scholarships, etc., consult the *Bulletin of General Information* which may be obtained upon request. Address Office of Admissions and Records, University of Minnesota, Minneapolis 14.

PROGRAMS OF STUDY

1. Courses for Medical Health Officers

Major Advisers: Gaylord W. Anderson, Stewart C. Thomson, Leonard M. Schuman

REQUIREMENTS FOR ADMISSION

1. The 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

The course of study leading to the degree of master of public health covers a minimum of 3 academic quarters. These quarters may be taken in a single academic year or divided among 2 or more years according to the preference of the student. In all cases the student should plan to begin in a fall quarter. The following program of courses is suggested:

Recommended Courses

(Credits shown in parentheses)

Pub.H. 102,** 114—Environmental Sanitation (5)	Pub.H. 153—The Hospital and the Community (1)
Pub.H. 104,** 105—Epidemiology (6)	Pub.H. 170**—Public Health Nursing Practice (3)
Pub.H. 106,** 122—Public Health Administration (6)	Pub.H. 191—Science of Human Nutrition (3)
Pub.H. 107—Maternal and Child Health (3)	Pub.H. 195—Public Health Aspects of Cardiovascular Disease (3)
Pub.H. 125**—Community Health Education (3)	Pub.H. 210—Seminar in Public Health (1)
Pub.H. 126—Occupational Health Programs (3)	Med. 205—Tuberculosis (2)
Pub.H. 133—Mental Health (3)	Ped. 158—Contagious Diseases (1)
Pub.H. 140**—Vital Statistics I (3)	Pol. 120-121—Municipal Functions and Administration (6)
Pub.H. 141—Economic and Social Aspects of Medical Care (3)	

2. Courses for Public Health Engineers

Major Advisers: Herbert M. Bosch and Theodore A. Olson

SPECIAL REQUIREMENTS FOR ADMISSION

1. Degree in engineering, preferably in civil, sanitary, or chemical engineering.
2. Adequate training in basic and applied sciences, including bacteriology.

** Required course.

PLAN OF INSTRUCTION

The course of instruction leading to the Master's degree covers a minimum of 3 quarters of study.

The program includes training in all phases of environmental sanitation and in other important branches of public health work. These courses are supplemented by electives from other departments of the University according to the special needs and interests of the student. Among the courses of special interest and value are the following:

Recommended Courses

(Credits shown in parentheses)

Pub.H. 100—Elements of Preventive Medicine and Public Health (3)	An.Ch. 140—Water Analysis (3)
Pub.H. 102**—Environmental Sanitation I (3)	Arch. 104—City Planning (3)
Pub.H. 104**—Epidemiology I (3)	C.E. 161—Hydrology (3)
Pub.H. 106**—Public Health Administration (3)	C.E. 170—Water Supply (3)
Pub.H. 108—Introduction to Biostatistics (3)	C.E. 171—Sewerage and Sewage Treatment (3)
Pub.H. 110, 111—Biometric Principles and Laboratory (5)	C.E. 172—Sanitary Laboratory (3)
Pub.H. 112a, b, c—Public Health Engineering: Plan Examinations (3)	C.E. 173—Sanitary Engineering Problems (Water) (3)
Pub.H. 113a, b, c—Public Health Engineering: Field Investigations (6)	C.E. 174—Sanitary Engineering Problems (Sewage and Industrial Wastes) (3)
Pub.H. 115—Food Sanitation (3)	C.E. 175—Industrial Waste Disposal (3)
Pub.H. 116—Public Health Engineering Administration (2)	C.E. 261—Water Plant Design (3-5)
Pub.H. 117-118-119—Sanitary Biology (9)	C.E. 262—Sewage Plant Design (3-5)
Pub.H. 120-121, 130-131—Advanced Biostatistics (10)	Ch.En. 131—Inorganic Technology (3)
Pub.H. 125**—Community Health Education (3)	Ch.En. 132—Organic Technology (3)
Pub.H. 140**—Vital Statistics (3)	Ch.En. 140—Water Analysis (2)
Pub.H. 152—Industrial Hygiene Engineering (3)	Dy.Hu. 51—Market Milk (3)
Pub.H. 170**—Public Health Nursing Practice (3)	Dy.Hu. 116—Milk Secretion (3)
Pub.H. 194—Human Factors in Industry (3)	Dy.Hu. 150—Dairy Bacteriology (3)
Pub.H. 210—Seminar in Public Health (1)	Food 101—Food Technology (3)
Pub.H. 212—Seminar in Public Health Engineering (ar.)	M.E. 160—Heating and Ventilation (3)
	M.E. 165—Advanced Heating, Ventilation, and Air Conditioning (3)
	M.E. 169—Heating and Ventilation Laboratory (2)
	Pol. 120-121—Municipal Functions and Administration (6)
	Soc. 161—Social Aspects of Housing and Standards of Living (3)

3. Courses for Public Health Nurses

Major Advisers: Marlon Murphy, Ruth von Bergen, Nora Cline, Evelyn Sanburn

SPECIAL REQUIREMENTS FOR ADMISSION

Candidate for Bachelor of Science Degree

1. Ability to meet regular entrance requirements of the University in terms of graduation from an accredited high school with an acceptable record. (See *Bulletin of General Information*, obtainable from the Office of Admissions and Records.)
2. Graduation from an accredited school of nursing.

** Required courses. Pub.H. 100 may be substituted for Pub.H. 104; Pub.H. 108 or Pub.H. 110 and 111 for Pub.H. 140.

Advanced standing will be determined upon review of School of Nursing record and transcripts of other college work submitted by applicant.

Candidate for Certificate in Public Health Nursing

1. Graduation from accredited school of nursing.
2. Bachelor's degree.
3. Courses in bacteriology, psychology, and sociology. Admission without these courses may be approved subject to their completion before award of certificate. They may not, however, be substituted for required courses.

Candidate for Master of Public Health Degree

1. Bachelor's degree.
2. Major sequence in public health nursing (or equivalent) in an approved program of study.
3. A minimum of 3 years of satisfactory experience in public health nursing; supervisory experience is desirable. See page 12.

Candidate for Master of Science Degree

1. Bachelor's degree.
2. Major sequence in public health nursing (or equivalent) in an approved program of study.
3. Experience deemed to be sufficient in quality and quantity by Admissions Committee. See page 12 and the *Bulletin of the Graduate School*.

1. Undergraduate Program—The primary purpose of this program of study is to prepare graduate nurses for beginning staff positions under nursing supervision in either voluntary or official public health agencies. The program consists of basic courses in public health and public health nursing, supplemented by general academic courses which satisfy degree requirements, and of electives which serve to broaden and individualize the student's educational background. The student whose plans for completing the degree program are uncertain may limit her study to the major in public health nursing, thus qualifying for the usual civil service or state certification requirements for a public health nursing position. A statement attesting to the fact that a student has been admitted as a degree candidate and has completed the public health nursing major in an approved program of study can be issued to employers upon request. The certificate as such is granted only to those students who have a Bachelor's degree prior to enrollment in the public health nursing program. (See page 13.)

Students who do not find it possible to remain in school during consecutive quarters to meet degree requirements are encouraged to make a long-term educational plan so that their programs will result in educational experiences arranged with continuity and economy. Such students may, with the approval of the University of Minnesota, take certain non-public health courses in colleges or universities near their work and transfer the credit to the University. (See page 13 regarding residence requirements.) While students are admitted for as little as 1 quarter of professional course work at a time, at least 2 consecutive quarters are recommended. Students who plan to remain in school for longer than 1 year are advised to register for general academic subjects in advance of or concurrently with professional courses. When students who have

completed the public health nursing major as sophomores return to finish degree requirements, they will be enrolled in a senior seminar in which current trends and concepts in public health nursing will be reviewed.

Students with special interest in school nursing will receive assistance in planning the Bachelor's degree program so as to meet special certification requirements.

Bachelor of Science Degree with a Major in Public Health Nursing

(Credits shown in parentheses)

General Requirements

English—The required course will depend upon the results of the English Placement Test which must be taken before the date of registration (9-15)

Spch. 5—Fundamentals of Speech (5)
(or) Spch. 1-2—Fundamentals of Speech (6)

Bact. 53—General Bacteriology (5)

Psy. 1-2—General Psychology (6)

C.W. 40—Child Training (3)

Human sciences:

Soc. 1—Introduction to Sociology (3)

Soc. 141—The Family (3)

Anth. 1—Introduction to Anthropology (5)

(or) Anth. 2—Introduction to World Ethnology (5)

Pol. 1-2—American Government and Politics (6)

(or) Pol. 25—World Politics (3)

Education elective (3)

Nursing Administration or Nursing Education elective (3)

Major in Public Health Nursing §§

Pub.H. 62—Public Health Nursing I (5)

(or) Pub.H. 62a—Public Health Nursing I (3)

Pub.H. 63—Public Health Nursing II (5)

(or) Pub.H. 63a—Public Health Nursing II (3)

Pub.H. 65—Field Practice in Public Health Nursing (12-15)¶¶

Pub.H. 75—Introduction to Environmental Sanitation (3)

Pub.H. 95—Human Nutrition (3)

(or) H.E. 34—Nutrition Problems (4)

(or) H.E. 76—Nutrition (4)

Pub.H. 100—Elements of Preventive Medicine and Public Health (3)

Pub.H. 133—Mental Health (3)

Ed. 81—Introduction to Education for Public Health Nurses (3)

Soc. 50—Introduction to Theory and Practice of Social Work (5)

Electives

Public Health (3)

Other—Electives in other fields selected with guidance from adviser

Advanced Standing for 3-year nursing course (45-60)

Total credits required for degree—180

2. Graduate Program—This program extends over a minimum of 3 quarters of study, leading either to a master of public health or master of science degree. Students are required to take a group of courses in public health nursing covering such areas as advanced practice, supervision, administration, consultant service and principles of research. These are supplemented by certain courses in public health designed to familiarize public health nursing students with the problems of other professional groups with whom they will work in public health agencies.

It is the philosophy of the public health nursing faculty that analysis of case material from even a limited amount of field practice is an essential part of an advanced program of study for those who are preparing for positions of responsibility. Provision for this will be made for each student. Students with special interest in the field of public health nursing education may secure additional preparation by remaining for a longer period of study.

§§ "Certificate Course" for nurses with Bachelor's degree.

¶¶ Exemption from part of this requirement may be granted for satisfactory prior experience under supervision.

Required Courses

(Credits shown in parentheses)

Pub.H. 102—Environmental Sanitation (3)	Pub.H. 170—Public Health Nursing Practice (3)
Pub.H. 104—Epidemiology (3)	Pub.H. 171—Studies in Public Health Nursing (3)
Pub.H. 106—Public Health Administration (3)	Pub.H. 174—Seminar in Supervision and Administration (3)
Pub.H. 125—Community Health Education (3)	Pub.H. 175-176-177—Advanced Practice in Public Health Nursing (9)
Pub.H. 140—Vital Statistics (3)	

Recommended Electives

Pub.H. 100—Elements of Preventive Medicine and Public Health (3)	Ed.C.I. 250—Higher Education in U.S. (3)
Pub.H. 122—Public Health Administration Problems (3)	Ed.C.I. 251—Curriculum Trends in American Colleges (3)
Pub.H. 126-127—Occupational Health Programs (4)	Ed.C.I. 252—Effective College Teaching (3)
Pub.H. 133—Mental Health (3)	E.Psy. 125—Group Dynamics in Education (3)
Pub.H. 139**—Advanced Field Practice: Block Placement (Ar.)	Nu.Ed. 162—Personnel Work in Nursing (3)
Pub.H. 141—Social and Economic Aspects of Medical Care (3)	Nu.Ed. 171—Curriculum of School of Nursing (3)
Pub.H. 178—Seminar in Mental Health (Ar.)	Nu.Ed. 190—Survey of Nursing Education (3)
Pub.H. 181-182-183—Principles and Methods in Community Health Education (9)	Soc. 141—The Family (3)
Pub.H. 195—Public Health Aspects of Cardiovascular Disease (3)	S.W. 260—Principles of Administration in Social Work (3)
Anth. 165**—Psychological Phases of Culture (3)	(or) S.W. 275**—Social Group Work I (3)
	S.W. 271—Community Organization (3)

Extended Program with Application of Mental Health Concepts in Field Practice—This program is 5 quarters in length and offers students opportunity for further depth in learning through field practice. Three quarters are spent on campus and the remaining 2 are devoted to field experience in Rochester, Minnesota, or other selected areas under the supervision of the co-ordinator of the mental health program.

Funds are available to help a limited number of students to defray the cost of this program. In some states, the division of mental health has funds which may be granted on application; traineeships for study from the National Institute of Mental Health of the National Institutes of Health are made available through the School of Public Health. Eligibility is dependent upon evidence of adequate preparation in psychiatric nursing. Application for a traineeship is made when the student applies for admission to the School of Public Health and is considered when all credentials have been received and evaluated.

4. Courses for Health Educators

Major Adviser: Ruth E. Grout

SPECIAL REQUIREMENTS FOR ADMISSION

1. Bachelor's degree from an acceptable institution.
2. Satisfactory background in (a) basic health sciences, including bacteriology, nutrition, and human physiology; (b) education and educational psychology; and (c) social sciences, including political science and sociology.

** Required for students in the extended program.

PLAN OF INSTRUCTION

The course of study leading to the Master's degree covers at least 4 academic quarters, one of which is devoted to field work in an approved training center.

Recommended Courses

(Credits shown in parentheses)

Pub.H. 100—Elements of Preventive Medicine and Public Health (3)	Pub.H. 181-182-183**—Principles and Methods in Community Health Education (9)
Pub.H. 102**—Environmental Sanitation I (3)	Pub.H. 190**—Field Work in Community Health Education (Ar.)
Pub.H. 104**—Epidemiology (3)	Pub.H. 210—Seminar in Public Health (1)
Pub.H. 106**—Public Health Administration (3)	Pub.H. 227—Problems in Community Health Education (Ar.)
Pub.H. 125**—Community Health Education (3)	Ed.C.I. 217—Seminar in School Health Education (3)
Pub.H. 133—Mental Health (3)	Jour. 150—Public Relations in Community Service (2)
Pub.H. 140**—Vital Statistics (3)	
Pub.H. 170**—Public Health Nursing Practice (3)	

Elective Courses ††

Pub.H. 95—Human Nutrition (3)	E.Psy. 159—Personality Development and Mental Hygiene (3)
Anth. 165—Culture and Personality (3)	E.Psy. 293—Psychology of Learning (3)
Ed.C.I. 105—Audio-Visual Aids Materials in Education (3)	Jour. 130-131—Communication Agencies and Public Opinion (6)
Ed.C.I. 150—Supervision and Improvement of Instruction (3)	Pol. 120-121—Municipal Functions and Administration (6)
Ed.C.I. 170—Curriculum and Course of Study Construction (3)	Soc. 120—Social Psychology (3)
Ed.C.I. 215—Problems in School Health Education (Ar.)	Soc. 162—Rural Social Institutions (3)
Ed.C.I. 252—Effective College Teaching (3)	S.W. 271—Community Organization (2)
Ed.C.I. 285—Professional Education of Teachers (3)	S.W. 275—Social Group Work I (3)

5. Courses for Public Health Sanitarians

Major Advisers: Herbert M. Bosch and Theodore A. Olson

SPECIAL REQUIREMENTS FOR ADMISSION

1. Bachelor's degree with a major in one of the natural sciences.
2. Adequate training in basic and applied science including bacteriology.

PLAN OF INSTRUCTION

The course of instruction leading to the Master's degree covers a minimum of 3 quarters of study.

The program includes training in all phases of environmental sanitation and in other important branches of public health work. These courses are supplemented by electives from other departments of the University according to the special needs and interest of the student. Among the courses of special interest and value are the following:

** Required course.

†† In addition to the listed courses which have been found most useful, there is a large number of offerings in education, journalism, psychology, and sociology from which the student may select.

Recommended Courses

(Credits shown in parentheses)

- | | |
|--|---|
| Pub.H. 100—Elements of Preventive Medicine and Public Health (3) | Pub.H. 152—Industrial Hygiene Engineering (3) |
| Pub.H. 102**—Environmental Sanitation I (3) | Pub.H. 170**—Public Health Nursing Practice (3) |
| Pub.H. 104**—Epidemiology I (3) | Pub.H. 181-182-183—Principles and Methods of Community Health Education (9) |
| Pub.H. 106**—Public Health Administration (3) | Pub.H. 191—Science of Human Nutrition (3) |
| Pub.H. 108—Introduction to Biostatistics (3) | Pub.H. 194—Human Factors in Industry (3) |
| Pub.H. 110, 111—Biometric Principles and Laboratory (5) | Pub.H. 210—Seminar in Public Health (1) |
| Pub.H. 115—Food Sanitation (3) | Pub.H. 212—Seminar in Public Health Engineering (Ar.) |
| Pub.H. 116—Public Health Engineering Administration (2) | An.Ch. 140—Water Analysis (3) |
| Pub.H. 117-118-119—Sanitary Biology (9) | Dy.Hu. 51—Market Milk (3) |
| Pub.H. 120-121, 130-131—Advanced Biostatistics (10) | Dy.Hu. 116—Milk Secretion (3) |
| Pub.H. 125**—Community Health Education Programs (3) | Dy.Hu. 150—Dairy Bacteriology (3) |
| Pub.H. 126—Occupational Health Programs (3) | Food 101—Food Technology (3) |
| Pub.H. 140**—Vital Statistics (3) | Pol. 120-121—Municipal Functions and Administration (6) |
| | Soc. 161—Social Aspects of Housing and Standards of Living (3) |

6. Courses for Public Health Veterinarians

Major Advisers: Gaylord W. Anderson and William T. Thorp

This program is offered in co-operation with the School of Veterinary Medicine located on the St. Paul Campus of the University.

SPECIAL REQUIREMENTS FOR ADMISSION

Degree of doctor of veterinary medicine from an acceptable institution.

PLAN OF INSTRUCTION

The program of study includes certain public health courses required of all candidates for a public health degree, supplemented by electives of special interest to the veterinarian. Special attention is given to offerings in veterinary medicine, food technology, dairy husbandry, and bacteriology. Among the courses of special interest and value are the following:

Recommended Courses

(Credits shown in parentheses)

- | | |
|--|---|
| Pub.H. 100—Elements of Preventive Medicine and Public Health (5) | Dy.Hu. 113—Technical Control (3) |
| Pub.H. 102,** 114—Environmental Sanitation (5) | Dy.Hu. 118—Milk Production and Secretion (3) |
| Pub.H. 103—Public Health Bacteriology (3) | Dy.Hu. 151—Advanced Dairy Bacteriology (3) |
| Pub.H. 104,** 105—Epidemiology (6) | Pol. 120-121—Municipal Functions (6) |
| Pub.H. 106,** 122—Public Health Administration (6) | V.Bac. 128—Veterinary Public Health Practice (2) |
| Pub.H. 115—Food Sanitation (3) | V.Bac. 205—Advanced Animal Bacteriology (3) |
| Pub.H. 125**—Community Health Education Programs (3) | V.Pa.P. 201—Advanced Animal and Poultry Pathology (3) |
| Pub.H. 140**—Vital Statistics (3) | V.Pa.P. 240—Advanced Veterinary Parasitology (3) |
| Pub.H. 170**—Public Health Nursing Practice (3) | Zool. 144-145-146—Animal Parasites and Parasitism (9) |
| Bact. 104—Sanitary Bacteriology (4) | |
| Bact. 116—Immunology (4) | |
| Bact. 124—Viruses (4) | |

** Required courses. Pub.H. 108 or Pub.H. 110 and 111 may be substituted for Pub.H. 140.

7. Courses for Hospital Administrators

Major Advisers: James A. Hamilton and James W. Stephan

SPECIAL REQUIREMENTS FOR ADMISSION

1. Bachelor's degree as attested by certified transcript of applicant's college record.
2. Course in elements and principles of accounting. 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. Recent photograph.
5. Names of three references (preferably connected with hospital, health, or medical field).
6. Personal interview by person designated by the University.

Because of the number of applicants for this program, only a limited number of students can be accepted. Experience in hospital administration is valuable but not essential and does not in any way shorten the period of study. Only full-time students will be accepted as degree candidates, though special students will be admitted to courses under certain circumstances. All correspondence regarding this program should be addressed to Director, Course in Hospital Administration, School of Public Health, University of Minnesota, Minneapolis 14.

PLAN OF INSTRUCTION

This program leads to the degree of master of hospital administration. The program is of approximately 21 months' duration, including 1 academic year of 3 quarters in full-time residence, and 1 calendar year of supervised administrative residency. The residency is under University supervision and the School guides the student in the selection of the residency. During the residency the student must prepare an acceptable formal report on a suitable topic. The curriculum draws upon other University facilities and upon facilities provided by hospitals within the region adjacent to the University. The course of study provides a central group of subjects pertaining directly to hospital administration, with supplementary instruction in related fields including public health, medical care, and business administration. All students must complete 60 credit hours of graduate work and maintain an average of not less than 1.5 based on A = 3, B = 2, C = 1.

The following program of courses will be followed:

First Year

(Credits shown in parentheses)

Pub.H. 100—Elements of Preventive Medicine and Public Health (3)	Pub.H. 161—History and Development of Hospitals (3)
Pub.H. 106—Public Health Administration (3)	Pub.H. 162-163-164—Principles of Organization and Management of Hospitals (15)
Pub.H. 108—Introduction to Vital Statistics (3)	Pub.H. 166—Hospital Clerkship (5)
Pub.H. 109—Institutional Sanitation (3)	Pub.H. 167—Management Problems in Hospital Administration (6)
Pub.H. 125—Community Health Education (3)	Pub.H. 168—Orientation to Medical Sciences (3)
Pub.H. 141—Social and Economic Aspects of Medical Care (3)	Spch. 51—Public Speaking and Conference Leadership Technique (3)
Pub.H. 160—Principles of Administration in Hospitals (6)	

Second Year

Pub.H. 169—Administrative Residency (12)

8. Laboratory of Physiological Hygiene

Major Adviser: Ancel Keys

SPECIAL REQUIREMENTS FOR ADMISSION

1. Bachelor's degree from an acceptable institution.
2. Evidences 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

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 in 1 of 3 directions of emphasis: physiological, biochemical, or psychological. In general, the following courses, or their equivalents, will be required for the Master's degree:

(Credits shown in parentheses)

Pub.H. 100—Elements of Preventive Medicine (3)	Pub.H. 195—Public Health Aspects of Cardiovascular Disease (3)
Pub.H. 110—Biometric Principles (3)	Pub.H. 290—Research in Physiological Hygiene (6)
Pub.H. 111—Biostatistics Laboratory (2)	Phsl. 106—Physiology (15)
Pub.H. 191—Human Nutrition (3)	Graduate level courses in psychology (4)
Pub.H. 192—Physiology of Exercise (2)	Physiological chemistry or agricultural chemistry, graduate level courses (7)
Pub.H. 194—Human Factors in Industry (2)	

9. Courses for Vital Statisticians

Major Advisers: Alan E. Treloar, Jacob E. Bearman, and Eugene A. Johnson

SPECIAL REQUIREMENTS FOR ADMISSION

1. Bachelor's degree from an approved institution.
2. Broad training in natural sciences, particularly in biology.
3. Evidence of aptitude for quantitative reasoning.

PLAN OF INSTRUCTION

Programs leading to the master of public health degree must include basic courses in public health, supplemented by advanced courses in statistics and such other studies as seem best suited to give the student a well-balanced background for work in vital statistics. Study of procedures in state and city offices for vital statistics will be arranged as needed.

The following courses are suggested as a basis of first selection:

Recommended Courses

(Credits shown in parentheses)

- | | |
|--|---|
| Pub.H. 100—Elements of Preventive Medicine and Public Health (3) | Pub.H. 168—Orientation to Medical Sciences (3) |
| Pub.H. 102**—Environmental Sanitation I (3) | Pub.H. 170**—Public Health Nursing Practice (3) |
| Pub.H. 104**—105—Epidemiology (6) | Pub.H. 210—Seminar in Public Health (1) |
| Pub.H. 106**—Public Health Administration (3) | Jour. 150—Public Relations in Community Services (3) |
| Pub.H. 110, 111—Biometric Principles and Laboratory (5) | Math. 121-122-123—Mathematical Theory of Statistics (9) |
| Pub.H. 120-121, 130-131—Advanced Biostatistics and Laboratory (10) | Pol. 120-121—Municipal Functions and Administration (6) |
| Pub.H. 125**—Community Health Education (3) | Psy. 299—Tabulating Equipment Laboratory (1) |
| Pub.H. 140,** 150—Vital Statistics (6) | Soc. 111-112—Population Trends and Policy (6) |
| Pub.H. 141—Social and Economic Aspects of Medical Care (3) | |

** Required course—Pub.H. 100 may be substituted for 104.

DESCRIPTION OF COURSES

Explanations

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

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 not carry any page footnotes:

§ A section mark in the parenthetical statement means that credit will not be given if the equivalent course listed after the section mark has been taken for credit.

¶ A paragraph mark preceding a course number in the parenthetical statement means "concurrent registration," i.e., the course so indicated may be taken simultaneously.

‡ A sharp mark in the parenthetical statement means that students must obtain the consent of the instructor before attempting to register for the course.

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

Ar.	To be arranged or assigned	Lect.	Lecture
Cred.	Credits	Prereq.	Prerequisite
Equiv.	Equivalent	Qtr.	Quarter
Lab.	Laboratory	Rec.	Recitation

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

SUBCOLLEGIATE COURSES IN SCHOOL OF AGRICULTURE

A1f. Personal Health. Methods of promotion of health and prevention of disease; fundamentals of healthful living; individual and community activities against spread of disease. (1 cred.) Bates

A4w. Rural Sanitation. Disposal of excreta, sewage, and other waste; location, construction, and operation of rural water supplies; sanitary production, handling, processing, and serving of food; control of animals and insects involved in the spread of disease; ventilation and air conditioning; farm and home safety. (3 cred.) Stauffer

PUBLIC HEALTH (Pub.H.)

3af.w.s. Personal Health.** Normal body function; causes and prevention of disease. (2 cred., §3b or G.C. 10C) Thomson

3bf.w.s. Personal and Public Health.** Individual and community activities for promotion of health and safety. (2 cred., §3a or G.C. 10C) Thomson

4s. Health Problems of the Community.** Prevention of disease in family and community. (2 cred.; not open to students exempted from 3a or 3b on basis of military service; prereq. 3a or G.C. 10C) Eichenlaub

** No credit is granted for this course in major sequence in public health nursing curriculum.

- 50f.w.** Personal and Community Health.** Fundamental principles of health conservation and disease prevention. (3 cred., \$3a, 3b, 4, 51, 52, 100 or G.C. 10C) Thomson
- 51f.w.** Community Hygiene.** Community programs for disease control. (3 cred., \$4, 50, 100; jr., sr.; not open to students exempted from 3a or 3b on basis of military service; prereq. 3a, or G.C. 10C) Cowan, Eichenlaub
- 52f.w.s.** Home Nursing and Family Care.** Nursing care and observation of patient; equipment of sick room; care of mother and baby. (1 cred.; home economics students; prereq. 50 or 3b or #) Sanburn
- 57s.** Health of Infant and Child.** Infant and maternal mortality; growth and development of child; care and feeding of normal infant; prevention and correction of defects. (2 cred.; jr., sr.; prereq. 4, or 50, or 51, or 52, or 100) Wallace
- 58f. Maternal and Child Hygiene.** Health care during maternity cycle and through preschool years; problems, programs, and community facilities. (3 cred.; nurses; prereq. 62 and 100) Ar.
- 59w.s.** Health of the School Child.** Disease control; health appraisal; emotional problems; school environment; accident prevention and emergency care. (3 cred.; prereq. 3a and 4, or 3a and 51, or G.C. 10C and 4, or G.C. 10C and 51, or 50, or 52, or 100; exemption from 3a or 3b on basis of military service not acceptable as substitute for personal health course) Eichenlaub
- 60w.s. Tuberculosis and Its Control.** Current concepts of tuberculosis and its problems; development and operation of control programs. (2 cred.; nurses [others by permission]; prereq. 4, or 50, or 51, or 52 or 62 and 100, #) Myers
- 62su.†† Public Health Nursing I.** Nurse-family relationships; interviewing techniques; family health needs with emphasis on problems from birth until school age; home, clinic, and community. (5 cred.; public health nurses [others by permission]; prereq. 100 or †100, #) Murphy, Cline, Sanburn
- 62af.w. Public Health Nursing I.** Introduction to public health nursing; nurse-family relationships; interviewing techniques; analysis of family health needs. (3 cred.; public health nurses; prereq. †100, 133, Soc. 50, Pub.H. 65) Murphy, Cline, Sanburn
- 63su.†† Public Health Nursing II.** (Continuation of 62) Family health needs from the school period through old age; home, clinic, school, industry, and community; organization and administration of public health nursing services. (5 cred.; public health nurses [others by permission]; prereq. 62 and 100) Murphy, Cline, Sanburn
- 63aw.s. Public Health Nursing II.** Continuing analysis of public health nursing service; home, school, clinic, industry, community as operational areas; organization and administration of services. (3 cred.; public health nurses; prereq. 62a, 65) Murphy, Cline, Sanburn
- 64w. Public Health Nursing in Chronic Diseases.** Major chronic diseases; social and psychological factors; nursing responsibilities in prevention, care, and rehabilitation. (3 cred.; public health nurses; prereq. 62 and 100) Ar.
- 65f.w.s. Field Practice in Public Health Nursing.** Practical experience in selected public health agencies; relationship of theory to practice. (12-15 cred.; prereq. 62, 63 or 62a, 100, 133, Soc. 50, C average) Murphy and staff
- 69s. The Nurse in the School.** Organization and administration of school health programs; health in school curriculum; nursing functions. (3 cred.; prereq. 62, 63 or 62a-63a, or †100, 133 or #) Murphy and associates
- 70f.s. Public Health Nurse and Community Health Classes.** Experience in planning for group teaching and leading an organized community class. (Cred. ar.; sr.; enrollment limited; prereq. 62, 63, 65, Ed. 81, or #) Ar.

** No credit is granted for this course in major sequence in public health nursing curriculum.

†† To receive credit for this course the student must complete both 62 and 63.

- 75s. Introduction to Environmental Sanitation.** Principles of urban and rural sanitation relating to water, food, wastes, housing, air, insects, rodents. (3 cred.; prereq. 3 cred. in public health) Bond
- 76s. Introduction to Public Health for Dental Students.** (1 cred.; fr., soph., jr. dent. students only) Jordan
- 77w. Dental Public Health.** Application of public health measures to the field of dentistry. (1 cred.; sr. dent. students only; prereq. 76) Jordan
- 90s. Medical Statistics I.** Frequency proportions and probability; rates, measured variables; chance variation and judgment of significance; association. (2 cred.; med. students [others by permission]) Treloar, Bearman, Johnson
- 91f.** Physiological Hygiene.** Basic physiological principles and facts. (4 cred.; jr., sr.; prereq. 8 cred. in chemistry and 4 cred. in human anatomy or equiv.) Brozek, Taylor
- 92w.** Physiological Hygiene.** Effects of exercise, nutrition, environment, and age on performance and health. (4 cred.; jr., sr.; primarily for students in physical education and public health; prereq. 91 or equiv.) Brozek, Taylor
- 95f. Human Nutrition.** Particular reference to public health. Nutritional values of foods, food utilization and requirements, food management, nutrition education. (3 cred.; prereq. courses in chemistry and biology, or *) J. Anderson, Stief
- 100f.s. Elements of Preventive Medicine and Public Health.** Occurrence and prevention of communicable, degenerative, and industrial diseases; protection of food, water, and milk; maternal and child health. (3 cred. [6 cred. for medical students]; prereq. 3a or 50, and course in bacteriology) Anderson, Thomson, Schuman
- 101f.w.s. Public Health Administration and Field Work.** Field trips to acquaint student with community health programs. (2 cred.; sr. med. students only) Thomson, Eichenlaub
- 102f. Environmental Sanitation I.** Methods for promoting man's health and comfort by controlling environment. (3 cred.; sr., grad.; prereq. 50 or 51 or 100 [or §50 or 51 or 100] and *) Bosch, Olson
- 103f.w.s. Public Health Bacteriology.** Bacteriologic and serologic diagnosis, public health laboratory administration and methods. (Cred. ar.; grad.; prereq. Bact. 101-102, 116 and *) Bauer
- 104w-105s. Epidemiology.** Factors underlying spread of infectious diseases, with detailed discussion of selected diseases; simple statistical and epidemiologic methods. (3 cred. per qtr.; jr., sr., grad.; prereq. 100, 140 or 110-111) Schuman
- 106w.s. Public Health Administration.** Structure, basic functions, and activities of public health agencies. (3 cred.; prereq. 100) Anderson
- 107f. Maternal and Child Health.** Maternal, child, and adult hygiene in public health programs. (3 cred.; physicians [others by permission]; prereq. 100) Wallace
- 108w. Introduction to Biostatistics.** Variation; frequency distribution; probability; significance tests; estimation; trends. Lectures and laboratory exercises. (3 cred.) Johnson, Bearman
- 109w. Institutional Sanitation.** Sanitation practices in hospitals and other institutions. (3 cred.; hospital administrators [others by permission]; prereq. 100) Bosch, Bond
- 110f. Biometric Principles.** Univariate distributions, normal correlation, simple tests of significance. (3 cred.; sr., grad.; prereq. ¶111) Treloar, Bearman, Johnson
- 111f.s. Biostatistics Laboratory.** Practical training in techniques discussed in 110. (2 cred.; prereq. ¶110) Brown

** Both 91 and 92 must be completed to receive credit except with special permission of instructor.

- 112.** Public Health Engineering: Plan Examinations.** (Open to engineers; pre-req. 102 or #)
 112af. **Water Supplies.** (1 cred.) Bosch
 112bw. **Waste Disposal Systems.** (1 cred.) Bosch
 112cs. **Swimming Pools and Plumbing.** (1 cred.) Bosch
- 113.** Public Health Engineering: Field Investigations.** (Open to engineers [others by permission]; pre-req. 102)
 113aw. **Water Supplies.** (2 cred.) Bosch
 113bs. **Waste Disposal.** (2 cred.) Bosch
 113cs. **Swimming Pools and Plumbing.** (2 cred.) Bosch
- 114f.** Environmental Sanitation II.** Public health supervision of activities in the field of urban and rural sanitation. (2 cred.; pre-req. 102 or ¶102) Bosch
- 115w. Food Sanitation.** Sanitary problems in production, processing, and distribution of milk, meat, shellfish, and other foods; methods of public health supervision. (3 cred.; pre-req. 100 and 102 and #) Olson
- 116s.** Public Health Engineering Administration.** Administrative organization of environmental sanitation activities. (2 cred.; pre-req. #) Bosch
- 117f-118w-119s. Sanitary Biology.** Survey of plant and animal forms important in environmental sanitation, with special reference to disease vectors. (3 cred. per qtr.; pre-req. #) Olson
- 120w. Biostatistics II.** Estimation and hypothesis testing in experimental science; small sample tests (t , x^2 , F , analysis of variance); power. (3 cred.; pre-req. 110 with grade not lower than C, ¶121) Johnson, Bearman
- 121w. Biostatistics Laboratory II.** Practical exercises in theory discussed in 120. (2 cred.; pre-req. ¶120) Brown
- 122s. Public Health Administration Problems.** Budgeting; program planning; appraisal of public health procedures. (3 cred.; pre-req. 106) Anderson
- 123f.w.s. Topics in Public Health.** Selected readings in public health with discussion based on these readings. (Cred. ar.; pre-req. #) Staff
- 124. Medical Statistics II.** Selected statistical techniques in continuation of course 90, including analysis of data resulting from follow-up studies. (2 cred.; pre-req. 90; offered 1956-57) Staff
- 125s. Community Health Education.** Planning educational aspects of community health programs; group procedures; community organization; public relations; selection, development, and use of media. (3 cred.; pre-req. 100, 106) Grout
- 126s. Occupational Health Programs.** Professional, social, economic, and legal aspects; organization; technical aspects of specific health hazards. (3 cred.; pre-req. 100, In.Ch. 4-5 or equiv., or #) Foker
- 127s. Occupational Health Programs: Nursing Aspects.** Organization and administration of nursing service in industrial health programs. (1 cred.; pre-req. ¶126) Henriksen
- 129f.w.s. Field Work in Industrial Nursing.** Visits to selected industrial health services; supervised experience in industrial medical unit. (Cred. ar.; pre-req. 65) Ar.
- 130s. Biostatistics III.** (Continuation of 120) Regression and correlation with two or more variables; x^2 and analysis of variance. (3 cred.; pre-req. 120 with grade not lower than C, ¶131) Johnson, Bearman
- 131s. Biostatistics Laboratory III.** Practical exercises associated with 130. (2 cred.; pre-req. ¶130) Brown
- 133f.w. Mental Health.** Emotional factors underlying wholesome family relations or interfering with successful adjustment in family and community. (3 cred.; pre-req. 62 or experience in public health nursing or #) Williams, Cline
- 135w. Conservation of Hearing.** Detection, prevention, and amelioration of hearing impairments. (1 cred.; pre-req. 62, 100 or ¶100) Boies and associates

** Students who have taken 112, 113, or 116 will not receive credit for 114.

- 136w. Sight Conservation.** Conditions that impair human vision; community programs of vision testing and correction of defects; sight conservation. (1 cred.; prereq. 62, 100 or ¶100) Hansen and associates
- 137w. Dental Health.** Conditions resulting in tooth decay and loss; preventive and corrective measures; mouth hygiene; community programs for dental health. (1 cred.; prereq. 62, 100) Jordan
- 139f,w.s. Advanced Field Practice: Block Placement.** Opportunity for concentration on public health nursing field practice under supervision of coordinator of mental health program. (Cred. ar.; mental health trainees only; prereq. #) von Bergen
- 140f. Vital Statistics I.** Official sources; population changes; rates; trends; significant differences. (3 cred.) Treloar, Bearman, Johnson
- 141s. 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 cred.; prereq. #) Ar.
- 142s. Medical Economics.** Economic problems of medical and hospital care for community; programs for medical care and health and hospital insurance. (2 cred.; sr. med. students only) Ar.
- 150s. Vital Statistics II.** Sources of error in vitality records; adjustment procedures; morbidity and survival rates; life table and its application in medical problems. (3 cred.; prereq. 140 or equiv. with grade not lower than C; offered only when demand warrants) Staff
- 152f,w.s. Industrial Hygiene Engineering.** Field and laboratory methods used by industrial hygiene engineers in study and control of occupational health hazards. (3 cred.; prereq. #) Michaelsen
- 153s. The Hospital and the Community.** Functions and classifications of hospitals; organization and relation to health care and to public health agencies. (1 cred.; prereq. #) Stephan, Hamilton
- 154f,w.s. Control of Radiation Hazards.** Methods used in study and control of radiation hazards in laboratories, hospitals, and industrial plants. (Cred. ar.; prereq. #) Staff
- 160f. Principles of Administration in Hospitals.** Lectures, seminars, and field trips in hospital administrative principles; top management and board of trustees, personnel policy formation, human relations, research in administration. (6 cred.) Hamilton, Stephan, Lentz
- 161f. History and Development of Hospitals.** Functions; ownership and control; promoting and building new hospitals; integrated service; national associations and foundations. (3 cred.) Hamilton, Stephan
- 162f-163w. Principles of Organization and Management of Hospitals.** Departmental structures and functions; organizational principles and practice. (3 cred. [f], 6 cred. [w]) Stephan, Hamilton
- 164s. Principles of Organization and Management of Hospitals.** Personnel department; legal liability; reports; budgeting and insurance problems. (6 cred.; prereq. 162, 163) Stephan, Hamilton
- 166w. Hospital Clerkship.** Assignment to local hospital for survey or solution of special problem. (5 cred.) Stephan
- 167s. Management Problems in Hospital Administration.** Assignment and solution of specific managerial problems. (6 cred.; prereq. 162, 163, ¶164) Hamilton
- 168f. Orientation to Medical Sciences.** Medical terminology, applied anatomy and physiology. (3 cred.) Thomson
- 169. Administrative Residency.** Field work of 1 calendar year's duration in approved hospital; weighted rotation through departments, and solution of special problems. (Cred. ar.) Stephan
- 170w. Public Health Nursing Practice.** Organization of public health nursing services; methods of giving service to families and to community groups; teamwork with other disciplines. (3 cred.; prereq. 100) Murphy

- 171f. Studies in Public Health Nursing.** Application of scientific method to selected topics; preparation of a study. (3 cred.; public health nurses only) Murphy
- 173f.w.s. Field Experience in Supervision in Public Health Nursing.** (Cred ar.; prereq. 174, 175, 176, 177 or #) Ar.
- 174s. Seminar in Supervision and Administration.** Opportunity for analysis of selected aspects of administrative and supervisory process in public health nursing situations. (3 cred.; public health nurses only; prereq. 170, 171, 175-176, or #) Murphy
- 175f-176w-177s. Advanced Practice in Public Health Nursing.** Dynamics of human behavior; application to public health nursing practice on staff, supervisory, administrative, consultant levels through analysis of case material. (3 cred. per qtr.; public health nurses only) Williams, von Bergen, Cline
- 178f.w.s. Seminar in Mental Health.** Opportunity for pursuit of special topics of interest to individual students or to groups. (Cred. ar.; prereq. #) Ar.
- 181f-182w-183s. Principles and Methods in Community Health Education.** Group procedures; community organization; public relations; development and use of media. (3 cred.; prereq. #) Grout and associates
- 190f.w.s. Field Work in Community Health Education.** Three months of supervised field experience. (Cred. ar.; prereq. 125, 181, 227) Grout and associates
- 191f. Science of Human Nutrition.** Surveys; nutritional status; undernutrition; malnutrition; dietetics in social relief and medical practice. (3 cred.; prereq. #) J. Anderson, Keys
- 192w. Physiology of Exercise.** Muscular efficiency, training, deconditioning, effects of exercise on physiological systems. (Cred. ar.; prereq. 92 or Phsl. 103 or equiv. and #) Taylor, Simonson
- 194w. Human Factors in Industry.** Job requirements, physiological cost of work, industrial fatigue, hazards, accidents, absenteeism. (Cred. ar.; sr., grad.; prereq. #) Brozek
- 195w. Public Health Aspects of Cardiovascular Disease.** Etiology, incidence; problems of control and relationship to mode of life. (3 cred.; prereq. #) Keys, Grande
- 200f.w.s. Research.** Opportunities will be offered by the School and by various co-operating organizations for qualified students to pursue research work. (Cred. ar.) Staff
- 201f.w.s. Topics in Biometry.** Studies in special topics for advanced students. (Cred. ar.; prereq. 120, 130 and #) Treloar and associates
- 202f.w.s. Seminar in Physiological Hygiene.** Nutrition; tests and measurements of human physical fitness; gerontology; adaptation in health and disease; body composition; circulatory dynamics and related topics. (1 cred.) Staff
- 203. Research Design.** Planning of medical and other research investigations to maintain a high level of efficiency. (2 cred.) Staff
- 204. Sampling.** A review of sampling procedures and attendant errors of estimation, with special reference to human populations. (3 cred.; prereq. 130) Bearman
- 210f.w.s. Seminar in Public Health.** (Cred. ar.) Staff
- 211f.w.s. Seminar in Biometry.** (Cred. ar.) Treloar, Bearman
- 212f.w.s. Seminar in Public Health Engineering and Sanitation.** (Cred. ar.; prereq. #) Bosch
- 215f.w.s. Maternal and Child Health.** Administration of well-child and antepartum conferences. Psychosomatic problems of children. (Cred. ar.; physicians only; prereq. #) Wallace, Boynton
- 220f.w.s. Readings in Problems of Physiological Hygiene.** (Cred. ar.; prereq. #) Keys and staff

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- 227f.w.s. Problems in Community Health Education.** Independent study and experimentation in health education. (Cred. ar.; prereq. #) Grout
- 230w.s.su. Field Practice in Environmental Sanitation.** (Cred. ar.; prereq. #) Bosch
- 241s. Epidemiology of Noncommunicable Diseases.** Application of basic epidemiologic principles to noncommunicable diseases and to trauma; selected disease examples. (2 cred.; prereq. 104) Schuman
- 290f.w.s. Research in Physiological Hygiene and Related Areas.** (Cred. ar.) Staff