

# UNIVERSITY OF MINNESOTA

## Board of Regents

The Honorable Charles W. Mayo, M.D., Rochester, First Vice President and Chairman; The Honorable Marjorie J. Howard (Mrs. C. Edward), Excelsior, Second Vice President; The Honorable Daniel C. Gainey, Owatonna; The Honorable Bjarne E. Grottum, Jackson; The Honorable Albert V. Hartl, Fergus Falls; The Honorable Robert E. Hess, White Bear Lake; The Honorable Fred J. Hughes, St. Cloud; The Honorable Lester A. Malkerson, Minneapolis; The Honorable William K. Montague, Duluth; The Honorable George W. Rauenhorst, Olivia; The Honorable Otto A. Silha, Minneapolis; The Honorable Herman F. Skyberg, Fisher.

## Administrative Officers

O. Meredith Wilson, Ph.D., President  
William G. Shepherd, Ph.D., Vice President, Academic Administration  
Laurence R. Lunden, B.A., Vice President, Business Administration  
Stanley J. Wenberg, M.A., Vice President for Educational Relationships and Development  
Robert E. Summers, M.S.M.E., Dean of Admissions and Records  
Edmund G. Williamson, Ph.D., Dean of Students

## SCHOOL OF PUBLIC HEALTH

### Administration

Gaylord W. Anderson, M.D., Dr. P.H., Director, School of Public Health  
Stewart C. Thomson, M.S., M.D., M.P.H., Associate Director, School of Public Health  
Robert W. Schwanke, B.A., M.P.H., Assistant Director, School of Public Health  
David C. Berg, M.A., Assistant to the Director, School of Public Health

### Public Health Administration and Epidemiology

Gaylord W. Anderson, M.D., Dr.P.H., Mayo Professor; Director, Program for Health Officers  
Leonard M. Schuman, M.S., M.D., Professor of Epidemiology; Director, Program in Epidemiology

---

Volume LXIX, Number 15

August 1, 1966

### UNIVERSITY OF MINNESOTA BULLETIN

Published semimonthly January 1 to December 15 inclusive. Second-class postage paid at Minneapolis, Minnesota. Send change of address notices and other communications to Office of Admissions and Records, University of Minnesota, Minneapolis, Minnesota 55455.

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

Stewart C. Thomson, M.S., M.D., M.P.H., Professor  
 George E. Williams, M.D., Associate Professor  
 Edward J. Dvorak, M.P.H., Ph.D., Assistant Professor; Health Educator, University Health Service  
 Warren H. Gullen, M.D., M.P.H., Instructor  
 Robert N. Barr, M.D., M.P.H., Lecturer; Secretary and Executive Officer, Minnesota Department of Health  
 Henry Bauer, Ph.D., Lecturer; Deputy Executive Officer, and Director, Division of Medical Laboratories, Minnesota Department of Health  
 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  
 Evelyn Hartman, M.S., M.D., Lecturer; Director of 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  
 Wilford E. Park, M.D., Lecturer; Chief, Occupational Health Service, Division of Public Health, Minneapolis  
 John F. Shronts, M.S., M.D., Lecturer; Medical Director, General Mills, Minneapolis  
 C. A. Smith, M.D., M.P.H., Commissioner of Health, Minneapolis  
 Viktor O. Wilson, M.D., M.P.H., Lecturer; City Health Officer, Rochester

## Environmental Health

Richard G. Bond, M.S., M.P.H., Professor; Director, Program in Environmental Health  
 Rexford Singer, B.S.C.E., M.S., Assistant Professor; Assistant Director, Program in Environmental Health  
 George S. Michaelsen, B.Ch.E., M.S., Professor; Director, Environmental Health and Safety, University Health Service  
 Theodore A. Olson, Ph.D., Professor  
 Harold J. Paulus, Ph.D., Professor  
 Conrad P. Straub, Ph.D., Professor; Director, Environmental Health Research and Training Center  
 John O. Buxell, M.S., M.P.H., Associate Professor (on leave of absence)  
 Harry Foreman, M.D., Ph.D., Associate Professor; Associate Dean, Office of International Programs  
 Velvl W. Greene, Ph.D., Associate Professor  
 Orlando R. Ruschmeyer, Ph.D., Assistant Professor  
 Gustave L. Scheffler, B.S.C.E., Assistant Professor; Safety Engineer, University Health Service  
 Ralph O. Wollan, B.A., M.P.H., Assistant Professor; Health Physicist, University Health Service  
 Vladimir Nigrovic, M.D., Dr.Med., Research Associate  
 Walter H. Jopke, B.S., M.P.H., Instructor; Senior Sanitarian, University Health Service  
 Jess Kraus, M.S., M.P.H., Instructor  
 Carl M. Peterson, M.S., Instructor  
 Jerome J. Smith, B.S., Instructor  
 Norman Steere, B.S., Instructor; Safety Engineer, University Health Service

Wayland R. Swain, M.S., Instructor  
 Donald Vesley, M.S., Instructor; Senior Sanitarian, University Health Service  
 Albert Iglar, M.S., M.P.H., Research Fellow  
 Myrtle E. Rueger, B.A., Research Fellow  
 Stanley D. Sorenson, B.S., M.P.H., Research Fellow  
 Lee W. Stokes, M.S., Research Fellow  
 Gerald F. Briggs, B.S., Lecturer; Vice President—Chief Engineer, Edward E. Johnson, Inc., St. Paul  
 Albert W. Buzicky, M.S., Lecturer; Director, Metropolitan Mosquito Control District  
 Paul Ebb, B.M.E., Lecturer; Director of General Services, Charles T. Miller Hospital, St. Paul  
 Russell E. Frazier, B.A., Lecturer; Chief, Section of Engineering Laboratories, Minnesota Department of Health  
 Jack J. Handy, B.S., Lecturer; Director, Environmental Health, Division of Public Health, Minneapolis  
 Elmer Huset, B.C.E., M.P.H., Lecturer; Chief, Section of Water Supply and General Engineering, Minnesota Department of Health  
 Warren Lawson, B.Ch.E., M.P.H., M.D., Lecturer; Chief, Section of Radiation and Occupational Health, Minnesota Department of Health  
 Joe L. Mogg, M.S., Lecturer; Field Engineer, Edward E. Johnson, Inc., St. Paul  
 Raymond L. Schreurs, M.S., Lecturer; Geologist, Edward E. Johnson, Inc., St. Paul  
 Elmer C. Slagle, B.S., M.P.H., Lecturer; Assistant Director, Division of Hospital Services, Minnesota Department of Health  
 Lyle Smith, M.S., Lecturer; Chief, Section of Water Pollution Control, Minnesota Department of Health  
 Robert G. Wissink, M.S., Lecturer; Staff Health Physicist, Minnesota Mining and Manufacturing, St. Paul  
 Frank L. Woodward, B.E., M.P.H., Lecturer; Director, Division of Environmental Sanitation, Minnesota Department of Health

### Public Health Nursing

Marion Murphy, M.P.H., Ph.D., Professor; Director of Program in Public Health Nursing  
 Alma G. Sparrow, M.S., M.P.H., Assistant Professor; Assistant Director of Program in Public Health Nursing  
 Eleanor M. Anderson, R.P.T., M.P.H., Associate Professor  
 Ruth von Bergen, M.P.H., Associate Professor  
 Clare L. Blanchard, M.P.H., Assistant Professor  
 Delphie Fredlund, M.P.H., Assistant Professor  
 Helen R. Kohler, 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  
 Marie J. McIntyre, M.S., M.S. (Hyg.), Assistant Professor  
 Dorothy Downey, M.S., Instructor  
 Barbara J. Leonard, M.S., Instructor  
 Mary C. Simons, B.S., Instructor  
 Joan M. Boas, M.P.H., Research Fellow  
 Elaine C. van Leeuwen, M.S., Research Fellow

### *Administrative and Educational Staff in Co-operating Field Agencies*

- Evi Altschuler, M.P.H., Lecturer; Assistant Chief and Education Director, Section of Public Health Nursing, Minnesota Department of Health
- Hilda Boyle, M.P.H., Lecturer; Director Suburban Public Health Nursing Service, Minneapolis
- Irene M. Donovan, B.S., Lecturer; Executive Director, St. Paul Family Nursing Service, St. Paul
- Mary Graupman, B.S., Lecturer; Director of Public Health Nursing, Rochester—Olmsted County Health Unit, Rochester
- Vivian Harriman, M.A., Lecturer; Director of Public Health Nursing, Minneapolis Combined Nursing Service, Minneapolis
- Alberta Wilson, M.S., Lecturer; Chief, Section of Public Health Nursing, Minnesota Department of Health

### **Health Education**

- Ruth E. Grout, M.P.H., Ph.D., Professor; Director, Program in Health Education
- Norman A. Craig, B.A., M.P.H., Assistant Professor
- Robert W. Schwanke, B.A., M.P.H., Assistant Professor
- Marie E. Ford, B.S., M.P.H., Lecturer; Chief, Section of Health Education, Minnesota Department of Health

### *Field Associates*

- Alger J. Olson, B.S., Chief, Health Education Section, Division of Public Health, Minneapolis
- Jean Woodbury, B.S., Health Educator, Division of Public Health, Minneapolis
- Kenneth J. Taylor, M.P.H., Health Educator, Bureau of Health, St. Paul

### **Personal Health**

- Stewart C. Thomson, M.S., M.D., M.P.H., Professor
- Donald W. Cowan, M.S., M.D., Professor; Director, University Health Service
- Murray B. Bates, M.S., M.D., Assistant Professor
- Phillip D. Kernan, M.D., Assistant Professor
- Jerome J. Smith, B.S., Instructor

### **Biometry**

- Byron W. Brown, Jr., Ph.D., Professor; Director, Program in Biometry
- Jacob E. Bearman, Ph.D., Professor
- Richard B. McHugh, Ph.D., Professor
- Glenn E. Bartsch, Ph.D., Associate Professor
- Eugene A. Johnson, Ph.D., Associate Professor
- Marcus O. Kjelsberg, Ph.D., Associate Professor
- Marian W. Thornton, Ph.D., Associate Professor
- James R. Boen, Ph.D., Assistant Professor
- Franklin W. Briese, Ph.D., Assistant Professor
- Robert L. Evans, Ph.D., Assistant Professor

Alan E. Treloar, Ph.D., Research Associate  
Ruth B. Loewenson, M.S., Instructor  
Robert E. Sherman, M.S., Instructor  
Robert W. Hiller, M.S., Lecturer; Chief, Section of Vital Statistics, Minnesota  
Department of Public Health

## Laboratory of Physiological Hygiene

Ancel Keys, Ph.D., Professor; Director, Laboratory of Physiological Hygiene  
Joseph T. Anderson, Ph.D., Professor  
Francisco Grande, M.D., Professor  
Henry L. Taylor, Ph.D., Professor  
Henry W. Blackburn, M.D., Associate Professor  
E. Stanton Fetcher, Ph.D., Research Associate  
R. Willis Parlin, B.A., Research Associate

## Maternal and Child Health

Allyn G. Bridge, M.D., M.P.H., Associate Professor; Director, Program in Maternal  
and Child Health  
Charles A. Branthaver, M.D., Assistant Professor  
Delphie Fredlund, B.S., M.P.H., Assistant Professor  
Ruth Stief, B.S., M.P.H., Assistant Professor  
Gerald D. St. Denis, B.S., M.S.W., Instructor  
Eileen Reardon, B.S., M.P.H., Lecturer; Nutrition Supervisor, Minnesota Department  
of Health  
Lee E. Schacht, Ph.D., Lecturer; Geneticist, Minnesota Department of Health

## Hospital Administration

James W. Stephan, M.B.S., Professor; Associate Director, Program in Hospital  
Administration  
Vernon E. Weckwerth, Ph.D., Associate Professor  
Jerome T. Bieter, B.B.A., M.H.A., Assistant Professor  
A. Douglas Kincaid, Jr., B.A., Assistant Professor  
Theodor J. Litman, Ph.D., Assistant Professor  
John Sweetland, Jr., B.A., M.H.A., Assistant Professor  
Dennis D. Countryman, B.B.A., M.H.A., Instructor  
David V. Damberg, B.A., M.H.A., Instructor  
John E. Kralewski, B.S., M.H.A., Instructor  
Leslie J. Krob, B.S., M.H.A., Instructor  
Robert J. Laur, B.B.A., M.H.A., Instructor  
David D. PeKarna, B.A., M.H.A., Research Fellow  
Donald W. Dunn, B.A., M.H.A., Lecturer  
Kenneth M. Kelley, B.B.A., M.H.A., Lecturer  
Helen L. Knudsen, M.D., M.P.H., Lecturer; Chief, Division of Hospital Services,  
Minnesota Department of Health  
Fred A. McNamara, B.A., Lecturer; Hospital Consultant, Washington, D.C.  
Kurt W. Metzner, B.A., M.H.A., Lecturer

Edmund K. Nelson, B.S., M.H.A., Lecturer

Telmer O. Peterson, B.S., M.H.A., Lecturer; President, Northern Pacific Beneficial Association

### *Clinical Preceptors in Hospital Administration*

William L. Branson, B.S., M.H.A., General Superintendent, King County Hospital, Seattle, Washington

Bright M. Dornblaser, B.B.A., M.H.A., Director, Franklin County Public Hospital, Greenfield, Massachusetts

John C. Dumas, B.A., M.H.A., Deputy Director, Palo Alto-Stanford Hospital Center, Palo Alto, California

David L. Everhart, B.A., M.P.H., Administrator, Johns Hopkins Hospital, Baltimore, Maryland

Richard K. Fox, B.A., Superintendent, St. Luke's Hospital, Duluth

Robert Gaines, Colonel, USAF Hospital Keesler, Keesler Air Force Base, Biloxi, Mississippi

Gertrude M. Gilman, B.A., Director, University of Minnesota Hospitals

Frank S. Groner, B.A., LL.D., Administrator, Baptist Memorial Hospital, Memphis, Tennessee

Alexander M. Harmon, B.A., M.B.A., Administrator, Mt. Sinai Hospital, Minneapolis

Kenneth J. Holmquist, B.A., M.A., Superintendent, Bethesda Lutheran Hospital, St. Paul

Lloyd L. Hughes, B.A., LL.B., M.H.A., Executive Director, Rhode Island Hospital, Providence, Rhode Island

Merton E. Knisely, A.A., Administrator, St. Luke's Hospital, Milwaukee, Wisconsin

Edward H. Mandell, M.D., Director, Veterans Administration Hospital, Minneapolis

Matthew F. McNulty, Jr., M.H.A., Administrator, University of Alabama Hospital, Birmingham, Alabama

Robert C. Millar, B.A., Administrator, Abbott Hospital, Minneapolis

Russell H. Miller, B.A., M.H.A., Associate Director, University of Kansas Medical Center, Kansas City, Kansas

Wade Mountz, B.A., M.H.A., Administrator, Norton Memorial Infirmary, Louisville, Kentucky

Stanley R. Nelson, B.S., M.H.A., Administrator, Northwestern Hospital, Minneapolis

Herluf V. Olsen, Jr., B.A., M.H.A., Administrator, University of Florida Hospital and Clinics, Gainesville, Florida

David E. Olsson, B.S., M.H.A., Administrator, San Jose Hospital, San Jose, California

Carl N. Platou, B.A., M.H.A., Executive Vice-President, Fairview Hospital, Minneapolis

Boone Powell, LL.D., Administrator, Baylor University Hospital, Dallas, Texas

Jack W. Rivall, B.A., M.H.A., Administrator, Eitel Hospital, Minneapolis

Kenneth J. Shoos, B.A., Superintendent, St. Luke's Hospital, Cleveland, Ohio

Sister Mary Madonna, B.A., M.S.S.W., M.H.A., Administrator, St. Mary's Hospital, Minneapolis

Roger R. Starn, B.S., M.H.A., Administrator, St. Luke's Hospital, St. Paul

Carl A. Streufert, B.B.A., M.H.A., Administrator, Lutheran Hospital and Medical Center, Wheat Ridge, Colorado

Richard M. Trenkner, B.B.A., M.H.A., Administrator, Memorial Hospital of South Bend, South Bend, Indiana

William N. Wallace, B.A., M.H.A., Administrator, Charles T. Miller Hospital, St. Paul

Frank S. Walter, B.S., M.B.A., Director, St. Barnabas Hospital, Minneapolis  
Edwin M. Wehrman, Colonel, USAF Hospital Travis, Travis Air Force Base, California  
Rolland E. Wick, B.A., M.H.A., Administrator, Children's Hospital, San Francisco, California  
Russell B. Williams, B.A., M.H.A., Administrator, Kaiser Foundation Hospitals, Los Angeles, California  
Howard M. Winholtz, B.S., M.A., M.H.A., Administrator, Rochester Methodist Hospital, Rochester  
P. David Youngdahl, B.A., M.H.A., Administrator, Frederick Memorial Hospital, Frederick, Maryland

### Special Lecturers, 1964-66

Ernest A. Ager, Head, Communicable Disease Control, Washington State Department of Health  
Amos J. Alter, State Sanitary Engineer, Alaska State Health Department  
S. C. Atkins, Chief Engineer, Division of Environmental Health, World Health Organization, Geneva, Switzerland  
Earl Bakken, President, Medtronics Company, St. Paul  
Lawrence M. Benson, Sales Engineer, Commercial Sales Department, Northern States Power Company, Minneapolis  
Clyde Berry, Associate Director, Institute of Agricultural Medicine, College of Medicine, State University of Iowa  
Alfredo L. Bravo, Former Director General, National Health Service, Chile  
Ann Burns, Chief, Division of Nursing, Ohio State Department of Health  
James D. Caldwell, Public Health Engineer, Agency for International Development, Washington, D.C.  
Charles E. Carl, Director, Division of Sanitary Engineering, South Dakota State Health Department  
Ramon Casaprima, Field Engineer, Fairbanks, Morse and Company, Inc., Fair Lawn, New Jersey  
Edwin W. Chaffee, Engineering Consultant, Sisters of Charity of Nazareth, Louisville, Kentucky  
Vernon E. Cordell, Director, Public Health and Safety, National Restaurant Association, Chicago  
Robert Cruickshank, Professor of Microbiology, University of Edinburgh, Scotland  
Vern Dale, Director of Management, Housing and Redevelopment Authority, City of Minneapolis  
Iris M. Day, Departmental Informational Representative, Louisiana State Board of Health  
Joseph W. Degen, Assistant Director, Massachusetts General Hospital, Boston, Massachusetts  
Carlos Diaz-Coller, Chief, Professional Education Branch, Pan American Health Organization, Washington, D.C.  
Roy J. Dunlap, Managing Editor, St. Paul Dispatch Pioneer Press, St. Paul  
Edward V. Ellis, Director, Division of Public Health Education, Pennsylvania State Department of Health  
Paul M. Ellwood, Jr., Executive Director, American Rehabilitation Foundation, Minneapolis  
Frederick K. Erickson, Associate Regional Health Director for Environmental Health Services, Public Health Service, Kansas City, Missouri



- Milton A. Gabrielsen, Professor of Education, New York University, New York, New York
- Ira W. Gabrielson, Executive Officer and Head of Maternal and Child Health, Department of Epidemiology and Public Health, Yale University School of Medicine
- Richard P. Gaulin, Mechanical Engineer, Architectural and Engineering Branch, Division of Hospital and Medical Facilities, Public Health Service, Silver Springs, Maryland
- Wesley Gilbertson, Chief, Division of Environmental Engineering and Food Protection, Public Health Service, Washington, D.C.
- Hans R. Grigo, Technical Consultant, Home Department, National Safety Council, Chicago, Illinois
- Bernard L. Goldstein, Lt. Colonel, Medical Service Corps, U.S. Army
- Dan D. Gowings, Director, Division of Environmental Safety, Pennsylvania State Department of Health
- Lawrence B. Hall, Chief, Planetary Quarantine, National Aeronautics and Space Administration, Washington, D.C.
- Chris Hansen, Chief, Division of Research Services, National Institutes of Health, Public Health Service, Bethesda, Maryland
- Christian Hansen, Director of Maternal and Child Health, Aberdeen Area Office, Division of Indian Health, Public Health Service, Aberdeen, South Dakota
- John M. Haya Kawa, Chief Health Educator, San Jose City Health Department, California
- Sherman Headley, Assistant Manager for Television, WCCO Radio-TV, Minneapolis
- Richard L. Heath, Planner, Planning Department, City of Minneapolis
- Herman E. Hilleboe, DeLamar Professor of Public Health Practice, School of Public Health and Administrative Medicine, Columbia University
- T. Joseph Hogan, Associate Administrator for Property Services, Miners Memorial Hospital Association, Williamson, West Virginia
- William J. Holland, Chief, Education and Training Branch, Division of Accident Prevention, Public Health Service, Washington, D.C.
- Abraham Horwitz, Director, Pan American Health Organization, Washington, D.C.
- August Hoenack, Chief, Architectural and Engineering Branch, Division of Hospital and Medical Facilities, Public Health Service, Washington, D.C.
- John A. Holbrook, Assistant Director for Buildings and Grounds, Michael Reese Hospital and Medical Center, Chicago
- Dorothy Holtz, Director of Relocation, Housing and Redevelopment Authority, City of Minneapolis
- Donald Hughes, Radiation Protection Officer, University of Leeds, Leeds, England
- Dean Hungerford, Public Health Advisor, Division of Accident Prevention, Public Health Service, Washington, D.C.
- Edward L. Isenberg, Heart Disease Control Officer, Public Health Service, St. Paul
- Albert P. Iskrant, Chief of Developmental Research, Division of Accident Prevention, Public Health Service, Washington, D.C.
- Donald Jacobson, Director of Development, Housing and Redevelopment Authority, City of Minneapolis
- Francis A. Jacobs, Chief, Metropolitan Planning and Development Branch, Division of Environmental Engineering and Food Protection, Public Health Service, Washington, D.C.
- Saul Jarcho, Chairman, National Research Council Committee on Palaeopathology, New York, New York
- Paul V. Joliet, Chief, Division of Accident Prevention, Public Health Service, Washington, D.C.

- Robert Jorvig, Executive Director, Housing and Redevelopment Authority, City of Minneapolis
- Eugene J. Jungmann, Sales Representative, Bucyrus-Erie Company, Minneapolis
- A. Harris Kenyon, District Director, Food and Drug Administration, Minneapolis
- Robert H. Kerr, Architect, Ellerbe and Company, St. Paul
- Lynford L. Keyes, Chief, Bureau of Health Education, State Board of Health, Springfield, Illinois
- Harry P. Kraemer, Chief, Office of Resource Development, Public Health Service, Washington, D.C.
- Warren Leary, Jr., Publisher, *The Chronotype*, Rice Lake, Wisconsin
- Robert K. Lewis, Administrative Assistant to the Executive Vice President, Presbyterian—St. Lukes Hospital, Chicago
- Abraham Lilienfeld, Professor of Chronic Diseases, School of Hygiene and Public Health, Johns Hopkins University
- John A. Logan, President, Rose Polytechnic Institute, Terre Haute, Indiana
- Arthur Long, Commissioner of Public Health, State of Iowa
- E. D. Lyman, Director, Omaha—Douglas County Health Department, Omaha, Nebraska
- Leland J. Mamer, Director, Plant and Maintenance, New York University Medical Center, New York
- Antonio S. Medina, Associate Professor of Maternal and Child Health, School of Public Health, University of Puerto Rico
- Malcolm Merrill, Director of Public Health, State of California
- Roger J. Meyer, Department of Epidemiology and Community Medicine, College of Medicine, University of Vermont
- Janice Mickey, Professor, Graduate School of Public Health, University of Pittsburgh
- Alfred L. Moseley, Consultant in Traffic Safety, Cambridge, Massachusetts
- Arthur Naftalin, Mayor, City of Minneapolis
- Vinson R. Oviatt, Environmental Engineering Consultant, Division of Hospital and Medical Facilities, Public Health Service, Silver Springs, Maryland
- A. Faegin Parrish, Director, Division of Housing Hygiene and Accident Prevention, Georgia State Department of Health
- Robert Paul, Director, Engineering and Maintenance, Baylor University Hospital, Dallas, Texas
- Sylvia Peabody, Executive Director, Visiting Nurse Association, Detroit, Michigan
- Einar Pederson, Director, Cancer Registry of Norway
- James E. Perkins, Managing Director, National Tuberculosis Association, New York, New York
- John Philp, Director of Health, Kansas City Health Department, Kansas City, Missouri
- Ralph Pickard, State Sanitary Engineer, Kentucky State Health Department
- Charles S. Pineo, Chief, Community Water Supply Branch, Agency for International Development, Washington, D.C.
- William Poblete, Public Health Engineer, Rochester—Olmsted County Health Department, Rochester
- Howard Pyle, President, National Safety Council, Chicago, Illinois
- Otto Ravenholt, Health Officer, Las Vegas, Nevada
- Eva Reese, Executive Director, Visiting Nurse Service of New York, New York
- Robert Schwanke, Director, Architectural Barriers Educational Survey Project, Minnesota Society for Crippled Children and Adults, St. Paul
- Donald L. Snow, Chief, Radiological Health Data and Reports Staff, Division of Radiological Health, Public Health Service, Washington, D.C.

- Robert M. Sorenson, District Director, National Safety Council, Racine, Wisconsin
- James Steele, Chief, Veterinary Public Health Section, Communicable Disease Center, Public Health Service, Atlanta, Georgia
- Paul Steene, Director of Community Health Services, Minnesota State Department of Public Welfare
- Albert H. Stevenson, Assistant Surgeon General and Chief Sanitary Engineer, Public Health Service, Washington, D.C.
- Conrad P. Straub, Ph.D., Director, Robert A. Taft Sanitary Engineering Center, Public Health Service, Cincinnati, Ohio
- Emil A. Tiboni, Associate Professor and Director, Continuing Education Service, School of Public Health, University of Michigan
- Donald Townley, Public Health Engineer, Division of Environmental Engineering and Food Protection, Public Health Service, Kansas City, Missouri
- M. D. Tyson, Home Health Services Coordinator, Minnesota State Department of Health
- David J. Vail, Director of Medical Services, Minnesota Department of Welfare
- Henry L. Verhulst, Chief, Poison Control Branch, Public Health Service, Washington, D.C.
- Benjamin Viel, Professor of Hygiene and Preventive Medicine, University of Chile, Santiago
- Alberto M. Wachs, Visiting Professor of Sanitary Engineering, University of Pittsburgh
- Mrs. Walter Walker, Chairman, Governor's Council on the Aging, State of Minnesota
- Janice Westaby, Assistant Professor, School of Public Health, University of North Carolina
- Walter Whitlow, Chief, Section of Accident Prevention, Division of Health Education Services, Kansas State Board of Health
- Dan W. Wilcox, Sales Manager, ACME Fishing Tool Company, Parkersburg, West Virginia
- Walter E. Williams, Assistant Director, Mechanical Services, Baltimore City Hospital, Baltimore, Maryland
- Dorothy Wilson, Executive Director, Community Nursing Service, Philadelphia, Pennsylvania
- Charles Wright, Environmental Health Consultant, Division of Environmental Engineering and Food Protection, Public Health Service, Kansas City, Missouri
- James Wright, Chief, Vector Control, Division of Environmental Health, World Health Organization, Geneva, Switzerland
- Jack Zackler, Director, Maternal and Child Health, Chicago Board of Health

### Special Lecturers in Hospital Administration

- David Babcock, Vice President, Dayton's, Minneapolis
- Janet Brodahl, Assistant Administrator, Bethesda Lutheran Hospital, St. Paul
- Ray E. Brown, Director, Program in Hospital Administration, Duke University
- George Bugbee, Program in Hospital Administration, University of Chicago
- O. J. Campbell, Surgeon, Minneapolis
- John B. Coleman, Radiologist, St. Paul
- Thomas P. Cook, Executive Secretary, Hennepin County Medical Society, Minneapolis
- Richard T. Crist, President, Minnesota Hospital Service Association, St. Paul
- Edwin L. Crosby, Executive Director, American Hospital Association, Chicago

Ann Crowley, Administrative Dietitian, Abbott Hospital, Minneapolis

Nelson H. Cruikshank, Director (retired), Department of Social Security, AFL-CIO, Washington, D.C., Visiting Professor, School of Labor and Industrial Relations, Michigan State University, East Lansing, Michigan

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

Lloyd F. Detwiller, Consultant-Administrator, Health Sciences Centre, University of British Columbia, Vancouver, Canada

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

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

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

Tsutomu Kumagai, Executive Secretary, Metropolitan St. Paul Hospital Planning Council, St. Paul

Lucile P. Leone, Chief Nurse Officer, Public Health Service, Washington, D.C.

Charles C. Lindstrom, Administrator, Fairview Southdale Hospital, Minneapolis

Edward R. Lynn, Associate Administrator, Abbott Hospital, Minneapolis

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, Director, St. Paul Out-patient Center, St. Paul

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

Elov Nelson, Chaplain, Fairview Hospital, Minneapolis

Robert Nieman, Purchasing Agent, Charles T. Miller Hospital, St. Paul

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

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

C. J. Rowe, Psychiatrist, St. Paul

Alvin Schultz, Chief of Medicine, Hennepin County General Hospital, Minneapolis

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

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

David J. Vail, Medical Director, Minnesota Department of Public Welfare

Denver M. Vickers, Joint Commission on Accreditation of Hospitals, Chicago

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

Donald E. Wood, Executive Director, Twin City Regional Hospital Council, 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 some knowledge of personal health and an understanding of the community programs that exist for the promotion of the public health. The professional courses are intended to furnish technical training for those who seek a career in public health work or who wish to use technical knowledge and procedures in their future work in allied fields.

**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. Curriculums 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 a School of Public Health.

The various 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. The new environmental health research laboratories occupy one floor of the adjacent University Health Service building. 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 share in teaching responsibilities.

**Professional Programs in Public Health**—The School of Public Health provides programs of graduate study for health officers, dentists, public health

## *School of Public Health*

---

nurses, public health educators, public health veterinarians, vital statisticians, hospital administrators, public health nutritionists, and scientists, engineers, and sanitarians in the field of environmental health. Arrangements also can be made for other persons with professional training and public health experience, notably 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 of study leading to a professional degree in public health are required to take the basic core course (PubH 100A, B, C) and courses in epidemiology, health education, public health administration, public health nursing, environmental health, and statistics. To this nucleus of required courses, which so far as possible all advanced students take together, each of the professional groups adds 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 graduate work. Beginning with fall quarter of 1967, all programs will require a minimum of 11 months to complete. The programs in public health nursing and in health education extend 1 to 3 additional quarters, while students in the programs in environmental health, veterinary public health, and public health nutrition are expected to begin during the second term of Summer Session preceding the academic year of study. Students wishing to pursue advanced work 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. In all cases the student should plan to begin work in a fall quarter, or at the beginning of the second term of Summer Session.

**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 administration and basic courses in the fundamentals of public health.

**Program 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 *Bulletin of the Graduate School*.

**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, performance, 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 master of science or doctor of philosophy in physiology, physiological chemistry, and, 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 attendance only at a series of summer sessions. Special workshops or intensive programs of study are offered during the summer.

**In-Service Courses**—Noncredit, in-service courses are offered at the Nolte Center for Continuing Education through the co-operation 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 several courses through the Extension Division. Credits earned through extension courses can be transferred to count toward degrees. No professional courses are offered by correspondence.

**Training Stipends**—Under Sections 306 and 307, Public Health Service Act, funds are available through the Public Health Service to provide a limited number of stipends 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 or the degree for which the student is studying. Section 306 provides stipends for all types of public health personnel including nurses in the supplementary program, but excluding nurses working for advanced degrees. Stipends under this section are calculated on the basis of \$5,000 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, stipends are available to graduate nurses in the Master's program at \$250 a month regardless of previously earned degrees.

All stipends are awarded directly by the school. Students who are interested in applying for stipends 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 own countries, 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 which it can award directly to support the training of students from other countries.

**Special Stipends**—In addition to the foregoing, the school has been granted special stipends by the National Institutes of Health for training in epidemiology, biometry, and mental health. Funds from the Children's Bureau provide special stipends in the areas of maternal and child health and nutrition. Special stipends are also available from the Public Health Service for training

## *School of Public Health*

---

in the fields of radiological health, air pollution, hospital engineering, and accident prevention. Direct grants from the National Aeronautics and Space Administration provide stipends for students in space 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 application fee. 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 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.

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

**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 in Personal Orientation. A special orientation program for foreign students is offered through the Office of the Foreign Student Adviser during the week before fall quarter classes begin.

## 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 biometrics, environmental health, epidemiology, hospital administration, or physiological hygiene. Entrance upon work for this degree with a major in these 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 provides a coherent sequence of courses in several fields of social science.

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 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, 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 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 biometry, environmental health, epidemiology, 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.

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.”

## School of Public Health

---

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 PubH 100A, B, and C, and courses in epidemiology, health education, public health administration, public health nursing, environmental health, and statistics. The courses selected must have the approval of the student's adviser. An over-all 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. 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 32.

**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

(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 applications) .....	10.00
4. Incidental fee per quarter .....	27.00
5. Summer Session, per term	
Tuition (more than 4 credits) .....	59.50
Incidental fee .....	11.00
6. Special course fees are charged as follows:	
PubH 169, 190 (in addition to regular tuition) .....	100.00
PubH 230 (September field course—in lieu of tuition) .....	200.00
7. Graduation fee .....	10.00

If a student receives a stipend 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

## General Information

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.

### Partial Calendar, 1966-68

A few of the pertinent dates of the 1966-67 academic year are as follows:

	Beginning Date	Ending Date
First Term Summer Session 1966	June 13	July 16
Second Term Summer Session 1966	July 18	August 20
Interim Period (PubH 230) 1966	August 22	September 16
Fall Quarter 1966	September 26	December 17
Winter Quarter 1967	January 3	March 18
Spring Quarter 1967	March 27	June 10

The exact dates for the 1967-68 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 may be obtained from the Director of University Housing, 100 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.

### 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, Minnesota 55455.

# PROGRAMS OF STUDY

## 1. Program for Medical Health Officers

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

### 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 should be taken in a single academic year and for the 1966-67 year the student must plan to begin in fall quarter. Beginning with the 1967-68 academic year, students in this program must plan to begin their work with the second summer term preceding the regular academic year, and to remain in residence during the interim period between the end of second term Summer Session and the beginning of fall quarter. The program will thus require a minimum of 11 months in residence. The course of study includes certain required courses supplemented by electives chosen in accordance with the student's special interests and needs.

Physicians and dentists may choose to concentrate their electives in the fields of maternal and child health and epidemiology.

For physicians with a special interest in maternal and child health, there are several directly related electives (107, 214, 215, and 136). In addition, by using the course Public Health Topics (PubH 123), there are opportunities to extend one's study of maternal and child health problems and programs beyond those courses listed in this bulletin.

A limited number of traineeships sponsored by the Children's Bureau is available to physicians who are citizens of the United States (or who have filed a Declaration of Intent). Also supported by the Children's Bureau is a joint Pediatric-Public Health training program in Community Pediatrics, and a 2-year training program for dentists in Community Dentistry who wish to work with children with handicapping conditions.

Similarly, for students interested in concentration in epidemiology, a suitable group of electives exists (105, 213, 241) and through the use of topics and research courses, suitable emphasis can be obtained. Students wishing to gain special epidemiologic skills or desiring a Ph.D. program should read program description number 5.

Special traineeships are available at the school, from the National Institutes of Health, to support research training in epidemiology.

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

## School of Public Health

---

### Recommended Courses

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

PubH 100A, B, C**—Elements of Public Health (6)	PubH 154—Control of Radiation Hazards (3)
PubH 104,** 105—Epidemiology (6)	PubH 155—Introduction to Air Pollution Problems (3)
PubH 106,** 122—Public Health Administration (6)	PubH 170**—Administration of Public Health Nursing (2)
PubH 107—Maternal and Child Health (3)	PubH 191—Applied Human Nutrition (3)
PubH 114**—Environmental Health Programs (3)	PubH 195—Public Health Aspects of Cardiovascular Disease (3)
PubH 125**—Public Health Education (2)	PubH 210—Seminar: Public Health
PubH 132—Mental Health Program (1)	PubH 215—Maternal and Child Health (ar)
PubH 133—Mental Health (3)	PubH 241—Epidemiology of Noncommunicable Diseases (3)
PubH 140**—Vital Statistics I (3)	Anth 165—Culture and Personality (3)
PubH 141—Economic and Social Aspects of Medical Care (ar)	Pol 131—Public Administration (3)

## 2. Programs in Environmental Health

Major Advisers: Richard G. Bond, George S. Michaelsen, Theodore A. Olson, Conrad F. Straub, V. W. Greene, Harold J. Paulus, Gustave L. Scheffler, Rexford Singer

### *Programs Leading to Master of Public Health or Master of Science Degree*

#### Requirements for Admission

1. A Bachelor's degree (a) in engineering, preferably civil, sanitary, chemical, or mechanical, or (b) with a major in one of the natural sciences or mathematics.
2. Adequate training in basic and applied sciences, including a basic course in bacteriology.

#### Plan of Instruction

The course of instruction leading to a Master's degree ordinarily requires a minimum of 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 period between the end of second term Summer Session and the beginning of fall quarter.

The several programs that are available provide training in the general field of public health and, by the use of electives, specialized training in one or more of the separate fields of environmental health. The student may concentrate his electives in the areas of water supply, sewerage, general sanitation, sanitary biology, radiological health, air pollution, industrial health, hospital engineering or accident prevention.

## Programs of Study

**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, 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 *Bulletin of the Graduate School*.

**Master of Public Health**—Persons 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 specialized area of interest.

### Recommended Courses

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

- |   |   |
|---|---|
| PubH 100A, B, C**—Elements of Public Health (6)                               | PubH 152—Industrial Hygiene Engineering (3)   |
| PubH 102**—Environmental Health (3)   | PubH 154—Radiological Health I (3)  |
| PubH 104,** 105—Epidemiology I and II (6)                                     | PubH 155—Introduction to Air Pollution Problems (3)                                 |
| PubH 106**—Public Health Administration (3)                                   | PubH 156—Air Pollution Surveys and Control (3)                                      |
| Pub 110A, 111A—Biometrics I and Biometrics Laboratory I (5)                   | PubH 157—Radioisotope and Other Radiation Facilities (2)                            |
| PubH 112A, B, C—Public Health Engineering—Plan Examinations (2)               | PubH 158—Hospital Safety (3)  |
| PubH 113A, B, C—Public Health Engineering—Field Investigations (4)            | PubH 159—Chemical Laboratory Safety (1)   |
| PubH 115—Food Sanitation (3)  | PubH 170A**—Administration of Public Health Nursing (1)                             |
| PubH 115A—Institutional Food Sanitation (2)                                   | PubH 180**—Introduction to Biometrics (6) (110A and 111A or 140 may be substituted) |
| PubH 116—Public Health Engineering Administration (2)                         | PubH 185—Air Analysis (3)   |
| PubH 117A, B, C—Sanitary Biology (9)  | PubH 186—Problems of Air Pollution Control (ar)                                     |
| PubH 110B, 111B, 110C, 111C—Biometrics II and III (with laboratory) (10)      | PubH 191—Applied Human Nutrition (3)  |
| PubH 123—Topics in Public Health (ar)   | PubH 200—Research (ar)  |
| PubH 125**—Public Health Education (2)  | PubH 210—Seminar: Public Health   |
| PubH 126—Occupational Health Program (3)                                      | PubH 212—Seminar: Public Health Engineering and Sanitation (ar)                     |
| PubH 138—Hospital Engineering Problems (ar)                                   | PubH 230—Field Practice: Environmental Health (ar)                                  |
| PubH 140—Vital Statistics I (3)   | PubH 231—Ground Water Development (ar)  |
| PubH 145—Low Level Radioactivity and Radiation Measurements (3)               | PubH 232—Field Practice: Ground Water Development (ar)                              |
| PubH 146—Radiological Health II (3)   | PubH 233—Water Quality Investigation and Research Techniques (6)                    |
| PubH 147—Environmental Radioactivity (3)                                      | PubH 234—Water Quality Research (6)   |
| PubH 149—Public Health Aspects of Housing and the Residential Environment (3) | PubH 241—Epidemiology of Noncommunicable Disease (3)                                |
| PubH 151—Health Aspects of Air Control in Hospitals (2)                       |   |

The student's program of study can and usually does include additional course offerings from such other departments of the University as agronomy,

## *School of Public Health*

---

architecture, biochemistry, biophysics, botany, dairy industries, economics, agricultural, industrial, mechanical and sanitary engineering, entomology, geography, hydromechanics, microbiology, physics, physiology, plant pathology, political science, public administration, radiology, soil science, statistics, and zoology.

### **Traineeships**

A limited number of traineeships and fellowships is available for deserving student candidates 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 to the school in the specialized areas of air pollution, radiological health, hospital engineering, and accident prevention. Special traineeships are also available at the school from the National Aeronautics and Space Administration, and 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, one of the following:

1. A Bachelor's degree in civil, chemical, or mechanical engineering.
2. A Bachelor's degree with a major in chemistry or physics and a minor in some other science. Candidates presenting this qualification must also present evidence of having satisfactorily completed at least 2 years of college mathematics.
3. A Bachelor's degree with a major in bacteriology, entomology, zoology, biochemistry, or physiology and a minor in some other science.

Before being admitted to degree candidacy, the candidate will be expected to have had collegiate work in inorganic, organic, and analytical chemistry and, preferably, work in physical chemistry. At least 6 credits of biological sciences will also be required. 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.

### **3. Programs for Public Health Nurses**

Major Advisers: Marion Murphy, Alma Sparrow, Ruth von Bergen, Eleanor M. Anderson, Clare L. Blanchard, Delphie Fredlund, Rita A. Kroska, Marie J. McIntyre, Dorothy Downey, Barbara J. Leonard

#### ***Graduate Programs Leading to Master of Public Health or Master of Science Degree***

##### **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 full admission.
2. A grade point average of B in undergraduate course work.
3. Completion of the Miller Analogies test (graduate form). The University of Minnesota will arrange for applicants to take this in various testing centers in the United States.
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. This is related to program goal. Normally, applicants would be expected to have had some experience but, in the case of the practitioner program, well-qualified candidates will be accepted after completion of baccalaureate education.

##### **Plan of Instruction**

Nursing applicants 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. The experienced public health nurse whose career goal is a position on the policy determination level in public health (usually administration or consultation) should make application to the master of public health program. Nurses who wish to prepare for supervision, for junior teaching positions in collegiate schools of nursing, or recent college graduates who qualify for the practitioner curriculum should apply to the master of science program. A student's program plan does not need to be set until the beginning of the winter quarter. With faculty approval, it is possible to transfer from one type of degree program to the other at that time.



## School of Public Health

---

In both M.P.H. and M.S. programs, the main clinical area is public health nursing (or nursing in the community outside hospitals or related institutions). All graduate curriculums in public health nursing include the following components: advanced theory and practice in public health shared with multi-disciplinary students, advanced theory and practice in public health nursing, advanced courses in related fields, particularly the social science area, and orientation to research. Certain students may elect to pursue extra emphasis in mental health, long-term patient care and rehabilitation, or school nursing. (See Variations on page 27 for further detail.) All programs extend over a minimum of 5 consecutive quarters and, depending upon emphasis, a sixth quarter may be necessary. Beginning in the fall of 1967, all students should plan to remain for 6 quarters. See below for differentiation of curriculums according to type of degree and for a listing of offerings in public health nursing.

**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. The following courses are required:

PubH 100A, B, C—Elements of Public Health (6)	PubH 125—Public Health Education (2)
PubH 102A—Environmental Health (2)	PubH 140—Vital Statistics I (3)
PubH 104—Epidemiology I (3)	PubH 171, 172—Studies in Public Health Nursing (6)
PubH 106—Public Health Administration (3)	

**Master of Science**—This is a Plan B program in the Graduate School providing for concentration in public health and study in two related fields. All public health nursing students enrolled in the master of science program must complete a minimum of 21 credits in the area of concentration including the following courses:

PubH 100A, B, C—Elements of Public Health (6)	PubH 140—Vital Statistics I (3)
PubH 104—Epidemiology I (3)	PubH 171, 172—Studies in Public Health Nursing (6)
(or) PubH 106—Public Health Administration (3)	

Plan B requirements for the master of science degree stipulate that at least 18 additional credits must be taken in at least two related fields with a minimum of 6 credits required in each. See *Bulletin of the Graduate School*. Further detail concerning related fields in line with various career plans will be supplied by the School of Public Health.

### Public Health Nursing Courses

The following are public health nursing courses which are drawn upon in line with requirements for a certain curriculum or because of individual need and interest. Some of these are common core courses for public health nursing students in either the M.P.H. or M.S. program.

PubH 173—Culture and Public Health I (3)	PubH 176A, B, C—Clinical Seminar: Public Health Nursing (9)
PubH 174—Foundations of Public Health Nursing I (3)	PubH 177—Nursing in Family Health and Illness (3)
PubH 175—Foundations of Public Health Nursing II (4)	PubH 178A—The Public Health Nursing Practitioner (ar)

PubH 178B—Introduction to Supervision in Public Health Nursing (ar)  
PubH 179A, B—Long-term Patient Care and Rehabilitation (ar)  
PubH 221—Seminar: Nursing in Long-Term Patient Care and Rehabilitation (ar)  
PubH 222—Seminar: School Nursing and Related Field Practice (ar)  
PubH 223—Orientation to Teaching Public Health Nursing (3)  
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 Nursing: Mental Health (ar)

PubH 226B—Concepts of Behavior in Psychiatric Illness (ar)  
PubH 226C—Concepts of Behavior in Children's Problems (ar)  
PubH 230—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 (3)  
PubH 283—Seminar: Consultation (2)  
PubH 285—Culture and Public Health II (3)

Students are referred to the *Bulletin of the Graduate School* for descriptions of course offerings in anthropology, education, psychology, sociology, social work or other fields of interest. Further offerings in public health can be found in the same source or in the back section of this bulletin.

## Variations in Curriculums Within Public Health Nursing

### *Advanced Clinical Preparation*

**Mental Health**—Students may pursue either the master of science or master of public health sequence during the first 3 quarters. The remaining 2 quarters are devoted to field experience with instruction from the co-ordinator of the mental health program. The purpose of the additional 2 quarters of study is to provide opportunity for the student to increase her competence in public health nursing, particularly in the use of behavioral and mental health concepts.

During the field period the student has the opportunity to work with patients in a public health nursing caseload and psychiatric patients in and out of the hospital. The latter experience is accompanied by instruction from psychiatrists. Throughout the entire experience the student has opportunity to re-evaluate and add to her philosophy of public health nursing and to analyze her own performance. By the fall of 1967, faculty plans are to have this type of experience integrated into the program for all students.

**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 be enrolled in either the M.P.H. or M.S. program, depending on background and career goal.

**School Nursing**—This curriculum is based upon the belief that a public health nurse can contribute best to the school health program through increasing skills in her own field. In advanced public health nursing clinical experi-

## *School of Public Health*

---

ence, 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 observations and explorations in a school setting.

Courses in education, child growth and development, and in maternal and child health provide additional background for public health nursing within the contemporary school system. Students in this curriculum must be enrolled in the master of science sequence.

### *Functional Preparation*

**Supervision and/or Administration**—Nurses who are preparing for junior or beginning positions in supervision pursue theory and practice courses with emphasis on the guidance aspects of the supervisory relationship. Those with experience in supervision and/or administration have opportunity to secure additional preparation through analysis of the role, and through exploration of major theories of administration and of public health with appropriate practice under faculty guidance.

**Teaching**—This curriculum is designed to utilize to a maximum the multi-discipline setting of a school of public health plus the educational advantages made possible through proximity to a collegiate school of nursing. In addition, students have opportunity to share in courses in higher education and, with faculty guidance, to apply principles from public health, public health nursing, and education to the teaching of public health nursing.

**Advanced Practice**—This is a new curriculum, geared to the young college graduate who has interest in securing further depth as a clinical practitioner of public health nursing. The program includes selected experiences in the staff nurse role in a public health nursing agency under faculty guidance. Emphasis will be placed on transfer of learnings from the student's own clinical experience with families to the type of responsibility involved in the team leader role in a public health nursing agency.

### *Traineeships*

Students who are preparing on a Master's level for leadership positions in public health nursing are eligible to apply for federal training funds under Section 307, Public Health Service Act (Professional Nurse Traineeship Program). A student interested in the extended mental health sequence may apply for a traineeship under the National Institute of Mental Health.

In the case of either type of traineeship, students make application to the School of Public Health. No action is taken by the faculty until all admission materials have been processed and eligibility for admission to the program determined. Selection will be based upon individual credentials, considering such factors as demonstrated or potential leadership ability, academic and experience backgrounds, and references.

## 4. Programs for Health Educators

Major Advisers: Ruth E. Grout, Norman A. Craig

### Requirements for Admission

1. Bachelor's degree from an acceptable institution.
2. Satisfactory background in (a) basic health sciences, (b) education, and (c) social sciences.

### Plan of Instruction

The curriculum for health educators 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 health educator to understand the broad field of public health and to work effectively with other health personnel. It also provides for study of educational principles, methods, and techniques and the psychological and socio-cultural factors governing their selection and use. The program of study consists of required courses supplemented by electives chosen on the basis of the individual student's interests and needs. Graduates of the programs described below are prepared to work on various aspects of health education of individuals, groups, and the general public.

**One-Year Program**—This program consists of a minimum of 3 quarters of academic study and 1 quarter of supervised field work in an approved agency. A master of science program, with content similar to that for the master of public health, is offered through the Graduate School. Further information concerning the two programs is available from the School of Public Health.

**Two-Year Program**—This program is open to students who have just completed their Bachelor's degree, or to other qualified students who lack adequate professional experience in health education. Completion of the program leads to the master of public health degree. It consists of 3 quarters of academic study, followed by 2 quarters of supervised field work in an approved agency, and ends with 2 additional quarters of academic work on campus.

### Recommended Courses

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

PubH 95—Human Nutrition (3)	PubH 122—Public Health Administration Problems (3)
PubH 100A, B, C**—Elements of Public Health (6)	PubH 133—Mental Health (3)
PubH 102A**—Environmental Health (2)	PubH 140**—Vital Statistics (3)
PubH 104**—Epidemiology (3)	PubH 170**—Administration of Public Health Nursing (2)
PubH 106**—Public Health Administration (3)	PubH 181A, B, C**—Principles and Methods in Public Health Education (9)
PubH 107—Maternal, Child Health (3)	

## School of Public Health

---

- PubH 190\*\*—Field Work in Public Health Education (ar)  
PubH 210—Seminar: Public Health  
PubH 214—School Health Programs (2)  
PubH 227\*\*—Problems in Public Health Education (ar)  
Anth 150—Cultural Change and Development (3)  
Anth 164—Social Anthropology (3)  
Anth 165—Culture, Personality (3)  
EdCI 105—Audio-Visual Materials in Education (3)  
EdCI 205—Problems in Audio-Visual Education (ar)  
EdCI 215—Problems in School Health Education (ar)  
EdCI 217\*\*—Seminar: School Health Education (3)  
EPsy 159—Personality Development, Mental Hygiene (3)  
EPsy 193—Psychology of Human Learning (3)  
Jour 112—Communication, Public Opinion (3)  
Psy 140—Social Psychology (3)  
Soc 140—Social Organization (3)  
Soc 161—Rural Community Analysis (3)  
SW 274—Seminar: Community Organization (ar)  
SW 275—Social Group Work (3)

## 5. Program for Public Health Veterinarians

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

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

### 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 104,** 105—Epidemiology I and II (6)        |
| PubH 102**—Environmental Health (3) (114 may be substituted) | PubH 106,** 122—Public Health Administration (6) |
| PubH 103—Public Health Bacteriology (3)                      | PubH 115—Food Sanitation (3)                     |

- PubH 125\*\*—Public Health Education (2)  
PubH 154—Control of Radiation Hazards (3)  
PubH 155—Introduction to Air Pollution Problems (3)  
PubH 170A\*\*—Administration of Public Health Nursing (1)  
PubH 180\*\*—Introduction to Biometrics (6) (110A and 111A, or 140 may be substituted)  
PubH 210—Seminar: Public Health  
PubH 213—Seminar: Epidemiology (ar)  
PubH 230—Field Practice in Environmental Health (ar)  
PubH 241—Epidemiology of Noncommunicable Diseases (3)  
VBac 128—Problems in Veterinary Bacteriology and Public Health (3)  
VBac 205—Advanced Veterinary Bacteriology (3)  
VBac 221\*\*—Advanced Veterinary Public Health (ar)  
VPaP 202—Seminar: Pathology (1)  
VPaP 240—Advanced Veterinary Parasitology (3)  
VSR 219—Fundamentals of Nuclear Medicine (3)  
VSR 235—Radiation Biology (3)  
MicB 116\*\*—Immunology (3)  
MicB 124—Virology and Animal Cell Culture (3)  
Ent 118—Experimental Ecology (3)  
DInd 110—Sanitation Microbiology (3)  
DInd 113—Technical Control of Dairy Products (3)  
DInd 151—Advanced Dairy Bacteriology (3)  
Pol 131—Public Administration (3)

## 6. Program in Epidemiology

Major Advisers: Leonard M. Schuman and Gaylord W. Anderson

### Requirements for Admission

Specialized training in epidemiology 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 advanced training program in epidemiology is designed to develop students' proficiency in epidemiologic investigation suitable for careers in service, research, and 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 growth in proficiency.

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 will offer a minor in a field related to their background, interests, and special goals. The satisfactory completion of original research is a prerequisite 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.

## **7. Programs in Hospital Administration**

Major Advisers: James W. Stephan, Vernon Weckwerth, Theodor J. Litman,  
Robert J. Laur, John E. Kralewski

### ***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. Personal interview by person designated by the University.

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. Only full-time students will be accepted as degree candidates. All correspondence regarding this program should be directed to Director, Program in Hospital Administration, School of Public Health, University of Minnesota, Minneapolis, Minnesota 55455.

#### **Plan of Instruction**

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 a related health care institution. The program covers a 21-month period of time and consists of an academic year of 3 quarters in full-time attendance at the University and an administrative residency of 1 calendar year under a faculty-appointed clinical preceptor in an approved hospital. 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 within the region adjacent to the University. The program of study provides a central group of subjects pertaining directly to hospital operation and administration, 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) students are awarded the degree of master of hospital administration.

The following program of courses will be followed:

(Credits shown in parentheses)

*First Year*

- |  |  |
|--|--|
| 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 Statistical Decision-Making in Management (2) | PubH 167—Management Problems in Hospital Administration (6)                  |
| PubH 109—Institutional Sanitation (3)                                  | PubH 168—Orientation to Medical Sciences (3)                                 |
| PubH 125A—Public Health Education (1)                                  | PubH 170A—Administration of Public Health Nursing (1)                        |
| PubH 132—Mental Health Program (1)                                     | PubH 210—Seminar: Public Health  |
| PubH 141—Social and Economic Aspects of Medical Care (ar)              | Spch 106—Discussion (3)  |
| PubH 160—Principles of Administration in Hospitals (6)                 |  |

*Second Year*

- PubH 169—Administrative Residency (12)

## ***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. A Master's degree, with a major in hospital administration, will ordinarily serve as a 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.

### **Plan of Instruction**

The objective of this program is to produce scholars who plan to pursue teaching or research careers in hospital 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 (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



## **School of Public Health**

---

skill in its application to the hospital and other health services; and (5) to obtain experience and guidance in teaching hospital 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 courses in statistics numbered 100 or higher with the approval of his advisers. A reading knowledge of one foreign language is required and a research technique. A dissertation dealing with a significant problem concerning health care services as they relate to the role and function of the hospital is also required. Students lacking the 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.

## **8. Program in Physiological Hygiene**

Major Adviser: Ancel Keys

### **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**

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 are in the *Bulletin of the Graduate School*.

## **9. Program for Vital Statisticians**

Major Advisers: Byron W. Brown, Jr., Jacob E. Bearman, Richard B. McHugh, Glenn E. Bartsch, Marcus Kjelsberg, Marian W. Thornton, James R. Boen

### **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**

The program 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. Programs of study leading to the master of science and Ph.D. degrees with a major in biometry rather than vital statistics are available through the Graduate School. Details regarding such programs will be found in the *Bulletin of the Graduate School*.

## School of Public Health

---

### 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, 111A—Biometrics I and Biometrics Laboratory (5)	PubH 211—Seminar: Topics in Biometry (ar)
PubH 110B-111B, 110C-111C—Biometrics II and III (with laboratory) (10)	Stat 121-122-123, or Stat 131-132-133—Theory of Statistics (9)
PubH 120A, B, C—Biomedical Computing (9)	Soc 111—Population Theory (3)
PubH 125**—Public Health Education (2)	Soc 112—World Population Problems (3)
PubH 140,** 150 (or 150A)—Vital Statistics I and II (6)	Soc 152—Sociology of Medicine and Medical Institutions (3)
PubH 141—Social and Economic Aspects of Medical Care (ar)	Jour 150—Institutional Public Relations (2 or 3)
PubH 144—History of Biometry (2)	QA 171—Statistical Methods for Sample Surveys (3)

## 10. 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 with the second term Summer Session preceding the regular academic year. Students should plan to remain in residence during the interim between the end of second term Summer Session and the beginning of fall term. The first term Summer Session following the regular academic year will be devoted to field work in an approved training center.

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.

## Programs of Study

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

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

### 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 (3)                            | HE 279—Seminar: Nutrition (1)                      |
| PubH 106**—Public Health Administration (3)            | Anth 150—Cultural Change and Development (3)       |
| PubH 122—Public Health Administration Problems (3)     | Anth 165—Culture and Personality (3)               |
| PubH 123—Topics in Public Health (ar)                  | Soc 141—The Family (3)                             |
| PubH 125**—Public Health Education (2)                 | Soc 145—Urban Sociology (3)                        |
| PubH 140**—Vital Statistics I (3)                      | Soc 154—The Family in World Perspective (3)        |
| PubH 170**—Administration of Public Health Nursing (2) | SW 100—Special Topic: Working with the Aged (3)    |
| PubH 189—Field Work in Public Health Nutrition (ar)    | SW 101—Special Topic: The Deprived Child (3)       |
| PubH 191—Applied Human Nutrition (3)                   | SW 105—Special Topic: The Multi-Problem Family (3) |
| PubH 196—Seminar: Public Health Nutrition (ar)         | SW 271—Community Organization (2)                  |
| PubH 210—Seminar: Public Health                        | EdCI 104—Adult Education (3)                       |
| HE 170—Nutrition Principles (3)                        | EPsy 193—Psychology of Human Learning (3)          |
| HE 171—Maternal and Child Nutrition (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:

§ 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
Equiv	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 concept 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*

---

51. **Community Hygiene.** Community programs for disease control. (3 cr, \$4, \$5, \$50, \$100; not open to students exempted from 3 on basis of military service; prereq 3) Smith
52. **Home Nursing and Family Care.** Nursing care and observation of patient; equipment of sickroom; care of mother and baby. (1 cr; prereq home economics students, 50 or #) Simons
53. **Introduction to Public Health.** Basic concepts of disease prevention and control through community programs. (5 cr; nurses or nursing students only; prereq 3 or 50 or equiv and a course in bacteriology) Anderson, Thomson, Schuman
65. **Field Practice in Public Health Nursing.** Instruction and supervised experience in public health nursing in selected public health agencies. (Cr ar; prereq 53)
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
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
100. **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. (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 bacteriology) 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 environment. (3 cr; prereq #) Bond, Olson
- 102A. **Environmental Health.** General principles of urban and rural sanitation; problems encountered by official health agencies. (2 cr; prereq 100A or #) Bond
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 epidemiologic methods. (3 cr; prereq 100A, 140, 180 or 110A-111A) Schuman, Gullen
105. **Epidemiology II.** Extension of epidemiologic principles to detailed study of selected 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

## *Description of Courses*

---

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 administrators and §) Bridge
108. **Introduction to Statistical Decision-Making in Management.** Variation, frequency distribution; probability; significance tests; estimation; trends. Statistical approach to rational administrative decision-making. Lectures and laboratory exercises. (2 cr) Bearman, Weckwerth
109. **Institutional Sanitation.** Sanitation practices in hospitals and other institutions. (3 cr; prereq hospital administrators or §, 100A) Bond, Olson
- 110A. **Biometry I.** 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 § and ¶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. **Public Health Engineering: Plan Examinations.** (Prereq engineering degree and 102 and §)
- 112A. Water Supplies. (1 cr, §114) Bond
- 112B. Waste Disposal Systems. (1 cr, §114) Bond
- 112C. Swimming Pools and Plumbing. (1 cr, §114) Bond
113. **Public Health Engineering: Field Investigations.** (Prereq engineering degree and 102 and §)
- 113A. Water Supplies. (2 cr, §114) Bond
- 113B. Waste Disposal. (2 cr, §114) Bond
- 113C. Swimming Pools and Plumbing. (2 cr, §114) Bond
114. **Environmental Health Programs.** Public health supervision of activities in urban and rural sanitation. (3 cr, §112, §113, or §116; prereq §) Bond
115. **Food Sanitation.** A review of current literature on sanitary problems in production, processing, and distribution of milk, meat, shellfish, and other foods; methods of public health supervision. (3 cr; prereq 100A and §) Olson

## *School of Public Health*

---

- 115A. **Institutional Food Protection Programs.** Public health implications in the design, construction, and installation of food service equipment; sanitary controls in food preparation and service; regulatory controls by official public health agencies. (2 cr; prereq #) Bond
116. **Public Health Engineering Administration.** Administrative organization of environmental health activities. (2 cr, §114; prereq #) Bond
- 117A-117B-117C. **Sanitary Biology.** Plant and animal forms important in environmental sanitation, with special reference to disease vectors. (3 cr per qtr; prereq 100A or §100A or #) Olson
- 120A-120B-120C. **Biomedical Computing.** Introduction to data processing concepts and equipment; information storage and retrieval; statistical analysis packages, dynamic programming; special input/output techniques for biological laboratory experimentation, epidemiology, hospital information systems and pattern recognition. (3 cr per qtr; prereq Math 10) Johnson and staff
- 121A-121B-121C. **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; samples taken from recent dental and medical journals. (3 cr; prereq DDS or MD or #) Bearman
125. **Public Health Education.** Planning educational components of community health programs; group procedures; community organization; methods and materials. (2 cr; prereq #) Grout, Craig
- 125A. **Public Health Education.** Purposes; scope; methods and materials; planning, with special emphasis on hospitals. (1 cr; prereq hospital administrators or #) Grout
126. **Occupational Health Programs.** Professional, social, economic, and legal aspects; organization; technical aspects of specific health hazards. (3 cr; prereq 100A or §100A and #)
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
135. **Conservation of Hearing.** Detection, prevention, and amelioration of hearing impairments. (1 cr; prereq #)
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



## *Description of Courses*

---

137. **Dental Health.** Conditions resulting in tooth decay and loss; preventive and corrective measures; mouth hygiene; community programs for dental health. (1 cr; prereq #) Jordan
138. **Hospital Engineering Problems.** The application of environmental engineering, sanitation and maintenance principles and techniques, with particular reference to effective planning, administration, and operation of hospitals. (Cr ar; prereq #) Staff and visiting lecturers
139. **Advanced Field Practice in Public Health Nursing: Mental Health.** Opportunity for increasing competence in public health nursing practice including use of behavioral and mental health concepts; seminar analysis concurrent with experience with public health nursing patients including psychiatric patients. (Cr ar; prereq #) von Bergen
140. **Vital Statistics I.** Official sources; population changes; rates; trends; significant differences. (3 cr) Bearman, 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. (Cr ar; prereq #)
142. **Medical Economics.** Economic problems of medical and hospital care for community; programs for medical care and health and hospital insurance. (2 cr; prereq sr medical students only)
144. **History of Biostatistics.** Development of probability theory and systems for collection of vital statistics; early applications to life tables, medical, and biological problems; biographies of men important in development. (2 cr; prereq 3 cr in statistics) Thornton
145. **Low Level Radioactivity and Radiation Measurements.** Advanced isotope techniques designed for assay of low levels of radioactivity in environmental samples. Includes use of gamma spectrometry, liquid scintillation spectrometry and low background anticoincidence beta counters. (3 cr; prereq #)
146. **Radiological Health II.** Biological effects of radiation covering radiation biochemistry, acute radiation syndrome, chronic effects, cellular and hematological aspects and mutagenic properties of radiation. (3 cr; prereq #)
147. **Environmental Radioactivity.** Measurement, evaluation, and control of environmental radioactivity with special emphasis on radiation to the general population. Includes natural radioactivity, fallout, reactor environs, radioactive wastes, and radiation ecology. (3 cr; prereq #)
149. **Public Health Aspects of Housing and the Residential Environment.** The principles of healthful housing and their application in community planning and development. (3 cr; prereq #) Bond
150. **Vital Statistics II.** Demographic techniques for biometry majors. (3 cr; prereq 140 and 110A or #) Brown
- 150A. **Vital Statistics II.** Demographic techniques and statistical inference for public health majors. (3 cr; prereq 140 with grade B) Thornton
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

## *School of Public Health*

---

154. **Radiological Health I.** Orientation in radiation effects and the study and control of radiation hazards in laboratories, hospitals, and industrial plants. (Cr ar; prereq #)
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) Stephan
161. **History and Development of Hospitals.** Functions; ownership and control; promoting and building new hospitals; integrated service; national associations and foundations. (3 cr) Stephan, Kincaid
- 162-163. **Principles of Organization and Management of Hospitals.** Departmental structures and functions; organizational principles and practice. (3 cr [f]; 6 cr [w]) Stephan, Bieter
164. **Principles of Organization and Management of Hospitals.** Personnel department; legal liability; fiscal management, hospital insurance, research in administration. (6 cr; prereq 162, 163) Stephan, Bieter
166. **Hospital Clerkship.** Assignment to local hospital for survey and solution of special problem. (5 cr) Stephan, Bieter
167. **Management Problems in Hospital Administration.** Assignment and solution of specific managerial problems. (6 cr; prereq 162, 163, ¶164) Stephan
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) Stephan
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 #) Murphy
- 170A. **Administration of Public Health Nursing.** Scope; relationship to other aspects of public health. (1 cr, §170; prereq #) Murphy
- 171-172. **Studies in Public Health Nursing.** Orientation to research methodology; design and completion of a project. (3 cr per qtr; prereq 140) Murphy, Kroska, Sparrow
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
174. **Foundations of Public Health Nursing I.** Theory and analysis of the communication process in the one-to-one relationship. Seminar for application of communication and socio-cultural concepts to public health nursing. Selected experience with patients. (3 cr; prereq ¶173) Murphy and associates
175. **Foundations of Public Health Nursing II.** Psycho-social development and the dynamics of behavior. Seminars for analysis of nurse-patient interaction in student interviews. (4 cr; prereq 174) Williams and associates
- 176A-B-C. **Clinical Seminar: Public Health Nursing.** Opportunity for increasing competence in public health nursing practice through experience with patients and families in a community agency under faculty guidance; analysis of behavioral and mental health concepts in concurrent seminar. (3 cr per qtr; prereq 175) Murphy and staff

## *Description of Courses*

---

177. **Nursing in Family Health and Illness: Contemporary Concepts.** Examination of philosophy relative to nursing care and health guidance of patients and families from the antepartal through the geriatric periods. Opportunities provided to study current and developing community programs, including related research. (3 cr; prereq 175) E Anderson, Fredlund
- 178A. **The Public Health Nursing Practitioner.** Selected experiences in the staff nurse role in a public health agency under faculty guidance; organization of patient care services; interpretative role of public health nurse. (Cr ar; prereq 176, #) Sparrow
- 178B. **Introduction to Supervision in Public Health Nursing.** Philosophy and basic concepts; application to role of supervisee; adaptation to leadership of nursing team in community agencies. (Cr ar; prereq 176, #) Sparrow
- 179A. **Long-Term Patient Care and Rehabilitation.** Nursing problems associated with rehabilitation; selected experience correlated with seminars. (Cr ar; prereq 171, 174) E Anderson and associates
- 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 179) 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 #) Boen
- 181A, B, C. **Principles and Methods in Public Health Education.** Role of public health educator; group procedures; community organization; communication theory; methods and materials; program planning and evaluation; community surveys; concurrent field practice in health education. (4 cr; prereq #) Grout, Craig
185. **Air Analysis.** Laboratory and field exercises on problems involving industrial hygiene and air pollution. The exercises include air flow measurement, calibration of instruments, analysis of different gases, stack sampling, dust counting and sizing, and industrial plant visits. (3 cr; prereq 152 or 155, #) Paulus
186. **Problems of Air Pollution Control.** Special supervised studies involving laboratory and field investigation procedures; pertinent literature review. (Cr ar; prereq 155, #) Paulus
189. **Field Work in Public Health Nutrition.** Placement in an approved agency with opportunity for experience in various facets of public health nutrition programs. (Cr ar; prereq #) Stief and associates
190. **Field Work in Public Health Education.** Approximately 10 weeks of supervised field experience. (Cr ar; prereq 183, 227) Grout, Craig, and associates
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
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

## *School of Public Health*

---

- 197A-197B-197C. Elements of Mathematical Biology.** Physico-, chemico-, 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. (5 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 #) Evans
- 200. Research.** Opportunities will be offered by the School of Public Health and by various co-operating organizations for qualified students to pursue research work. (Cr ar) Staff
- 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.** (Cr ar) Staff
- 211. Seminar: Biometry.** (Cr ar) Staff
- 212. Seminar: Public Health Engineering and Sanitation.** (Cr ar; prereq #) Bond, Olson
- 213. Seminar: Epidemiology.** Discussion of selected current epidemiologic problems. (Cr ar) Schuman
- 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-B. Biomedical Measurement Problems.** Statistical aspects of biological assays and counting techniques, calibration problems, quality control procedures. (3 cr per qtr; prereq 110C) Brown
- 217A-B. Theory for Biomedical Measurement Problems.** (2 cr per qtr; prereq Stat 123 or 133 or #, and ¶PubH 216A-B) Brown
- 220. Readings in Problems of Physiological Hygiene.** (Cr ar; prereq #) Keys and staff
- 221. Seminar: Long-Term Patient Care and Rehabilitation.** Exploration of multi-disciplinary aspects; role relationships 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 #) Murphy, Fredlund

## *Description of Courses*

---

223. **Orientation to Teaching Public Health Nursing.** Evolution of public health nursing within collegiate nursing education; rationale for the relationship; impact of various related developments. (3 cr; prereq #) Murphy, McIntyre
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 #) Murphy, McIntyre
225. **Practicum in Teaching Public Health Nursing.** Planning for and evaluation of instruction; selected field experiences and seminars. (Cr ar; prereq #) Murphy, McIntyre
- 226A. **Clinical Seminar: Public Health Nursing-Mental Health.** Opportunity for increasing competence in public health nursing practice including use of behavioral and mental health concepts and use of the nurse-patient relationship. Seminar analysis concurrent with experience with public health nursing patients. (Cr ar; prereq 175) von Bergen
- 226B. **Concepts of Behavior in Psychiatric Illness.** Etiology of mental illness, psychopathology involved, and current treatment. Opportunity for experience with patients in a state hospital and within the community after discharge. (Cr ar; prereq ¶226A) von Bergen and associates
- 226C. **Concepts of Behavior in Children's Problems.** Concepts and current information on child development and psychological problems in children, etiology, treatment, and prevention. Selected experiences for involvement with children and their families. (Cr ar; prereq ¶226A) von Bergen and associates
227. **Problems in Public Health Education.** Independent study and experimentation in health education. (Cr ar; prereq #) Grout
230. **Field Practice in Environmental Health.** (Cr ar; prereq #) Bond, DeRoos
231. **Ground Water Development.** Development of ground water sources for public water supplies. Includes exploration through well design and construction. Special reference to public health problems involved. (Cr ar; prereq grad engineer and #) Bond, Singer, staff, visiting lecturers
232. **Field Work in Ground Water Development.** Development of ground water sources with special reference to construction of wells, field tests, and public health problems involved. (Cr ar; prereq grad engineer, 231) Bond, Singer, staff, visiting lecturers
233. **Water Quality Investigation and Research Techniques.** Field techniques and special research methods applicable to public health problems of water quality control. Procedures for establishing pollution baselines; appraisal and recognition of advancing eutrophication in surface and underground waters. (6 cr; prereq #) Olson, Odlaug
234. **Water Quality Research.** Design, logistical planning, and implementation of an independent, short-term research activity basic to water quality evaluation. Literature review, statistical design, and data processing. Field testing of sampling and laboratory operations. (6 cr; prereq #) Olson, Odlaug
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 #)

## *School of Public Health*

---

- 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 #) Stephan, 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 #) Stephan
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 #)
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 #) Litman
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 #) Stephan and staff
274. **Readings in Theory and Principles of Hospital Administration.** (Cr ar; prereq #) 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 #) Murphy, Blanchard
281. **Problems in Supervision and Administration in Public Health Nursing.** Analysis of selected aspects of administrative and supervisory process. (3 cr; prereq 280) Murphy, Blanchard
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) Blanchard
283. **Seminar: Consultation.** Opportunity for selected public health students to deepen understanding of the process involved in consultation. (2 cr; prereq #) Murphy 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



# UNIVERSITY OF MINNESOTA

## Board of Regents

The Honorable Charles W. Mayo, M.D., Rochester, First Vice President and Chairman; The Honorable Marjorie J. Howard (Mrs. C. Edward), Excelsior, Second Vice President; The Honorable Daniel C. Gainey, Owatonna; The Honorable Bjarne E. Grottum, Jackson; The Honorable Albert V. Hartl, Fergus Falls; The Honorable Robert E. Hess, White Bear Lake; The Honorable Fred J. Hughes, St. Cloud; The Honorable Lester A. Malkerson, Minneapolis; The Honorable William K. Montague, Duluth; The Honorable George W. Rauhenhorst, Olivia; The Honorable Otto A. Silha, Minneapolis; The Honorable Herman F. Skyberg, Fisher.

## Administrative Officers

O. Meredith Wilson, Ph.D., President  
William G. Shepherd, Ph.D, Vice President, Academic Administration  
Laurence R. Lunden, B.A., Vice President, Business Administration  
Stanley J. Wenberg, M.A., Vice President for Educational Relationships and Development  
Robert Edward Summers, M.S.(Ch.E.), M.E., Dean of Admissions and Records  
Edmund G. Williamson, Ph.D., Dean of Students

## DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION

### Faculty and Supervisory Staff

Frederic J. Kottke, M.D., Ph.D., Professor and Head, Department of Physical Medicine and Rehabilitation  
William G. Kubicek, Ph.D., Professor, Physical Medicine and Rehabilitation  
Glenn Gullickson, Jr., M.D., Ph.D., Associate Professor and Director, Rehabilitation Center  
Borghild Hansen, B.S., O.T.R., Associate Professor and Director, Course in Occupational Therapy  
Wilbur L. Moen, B.A., B.S., R.P.T., Assistant Professor and Director, Course in Physical Therapy  
Marian L. Eliason, B.S., O.T.R., Assistant Professor, Course in Occupational Therapy  
Marvin G. Lepley, B.S., O.T.R., Assistant Professor, Course in Occupational Therapy  
Martin O. Mundale, M.S., R.P.T., Assistant Professor, Course in Physical Therapy  
Helen V. Skowlund, M.S., R.P.T., Assistant Professor, Course in Physical Therapy  
Peter F. Briggs, Ph.D., Associate Professor, Physical Medicine and Rehabilitation, Psychology, Psychiatry and Neurology

---

Volume LXIX, Number 8

April 15, 1966

### UNIVERSITY OF MINNESOTA BULLETIN

Published semimonthly January 1 to December 15 inclusive. Second-class postage paid at Minneapolis, Minnesota. Send change of address notices and other communications to Office of Admissions and Records, University of Minnesota, Minneapolis, Minnesota 55455.

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



Frank M. Lassman, Ph.D., Professor, Audiology, Physical Medicine and Rehabilitation, Speech, Communication, and Theatre Arts

Theodore M. Cole, M.D., Assistant Professor, Physical Medicine and Rehabilitation

Daniel Halpern, M.D., Assistant Professor, Physical Medicine and Rehabilitation

Miland Knapp, M.D., M.A., Clinical Professor, Physical Medicine and Rehabilitation

Bror S. Troedsson, M.D., Associate Professor, Physical Medicine and Rehabilitation

Romine E. Matthews, Ph.D., Assistant Professor and Director, Vocational Rehabilitation

Frank Meelhuysen, M.D., Assistant Professor, Physical Medicine and Rehabilitation

John D. Allison, M.S., R.P.T., Instructor, Course in Physical Therapy

Helen M. Dahlstrom, B.A., O.T.R., Instructor, Course in Occupational Therapy

James F. Pohntilla, B.S., R.P.T., Instructor, Course in Physical Therapy

Henry C. Wessman, M.S., R.P.T., Instructor, Course in Physical Therapy

W. John Dawson, Jr., M.D., M.S., M.P.H., Clinical Assistant Professor, Physical Medicine and Rehabilitation

Ruby G. Overman, M.S., R.P.T., Clinical Assistant Professor, Physical Medicine and Rehabilitation

Richard R. Owen, M.D., Clinical Assistant Professor, Physical Medicine and Rehabilitation

Herbert A. Schoening, M.D., Clinical Assistant Professor, Physical Medicine and Rehabilitation

Arthur B. Quiggle, M.D., Clinical Instructor, Physical Medicine and Rehabilitation

Donna Pauley, B.S., R.P.T., Clinical Supervisor, Physical Therapy

Clarence A. Sicard, B.S., O.T.R., Clinical Supervisor, Occupational Therapy

Robert Bollinger, B.S., O.T.R., Work Evaluation Supervisor

Louvain Arndts, B.S., O.T.R., Assistant Supervisor, Occupational Therapy

Mary Lou Reyburn, B.S., R.P.T., Assistant Supervisor, Physical Therapy

Rudolph A. Ptak, B.S., R.P.T., Assistant Supervisor, Physical Therapy

Cornelia Burrill, B.S., R.P.T., Assistant Supervisor, Physical Therapy

### Contributing Faculty

Gaylord W. Anderson, M.D., Dr.P.H., Professor and Director, School of Public Health

A. B. Baker, M.D., Ph.D., Professor and Director, Division of Neurology

Annie Laurie Baker, M.A., Professor and Director, Department of Social Service

Alice R. Carlson, R.R.L., Medical Records Librarian

James R. Dawson, M.D., Professor and Head, Department of Pathology

Edna L. Fritz, M.D., Professor and Director, School of Nursing

Clifton A. Gayne, Ph.D., Professor and Chairman, Department of Art Education

John E. Harris, M.D., Professor and Head, Department of Ophthalmology

Donald W. Hastings, M.D., M.A., Professor and Head, Department of Psychiatry and Neurology

Arnold Lazarow, M.D., Ph.D., Professor and Head, Department of Anatomy

Francis W. Lynch, M.D., M.S., Professor and Director, Division of Dermatology

Howard F. Nelson, Ph.D., Professor and Chairman, Department of Trade and Industrial Education

John H. Moe, M.D., Clinical Professor and Director, Division of Orthopedic Surgery

Maurice B. Visscher, M.D., Ph.D., Professor and Head, Department of Physiology

# Occupational and Physical Therapy

## GENERAL INFORMATION

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. The following programs offered in the Department of Physical Medicine and Rehabilitation, Medical School, College of Medical Sciences, provide the student with a strong foundation in biological and physical sciences as well as an opportunity to obtain liberal arts courses which serve to develop individual interests and abilities. The therapist, both in occupational and physical therapy, provides to the field of rehabilitation specialized services which require high moral standards, optimum mental and physical well-being, and an understanding of the nature of his own life and the world in which he lives. The curriculums as planned strive to help the student achieve the following objectives:

1. The ability to communicate effectively.
2. The ability to understand others and to work effectively with them.
3. The ability to plan, initiate, co-ordinate, and evaluate treatment programs designed to meet the individual needs of the patient.
4. Competence in selected technical skills.
5. An appreciation of the scientific method as it is used in solving treatment problems and of the necessity for continued research.
6. An appreciation of the value of continuing education for personal and professional growth.

Each student is expected to distribute some part of his course work in areas of study other than those most closely related to his specialized or vocational interests.

## College Expenses

**Fees**—For complete information about fees and expenses, consult the *Bulletin of General Information*.

**Housing**—Information about residence halls may be obtained from the Director of University Housing, 100 Wesbrook Hall, University of Minnesota, Minneapolis, Minnesota 55455. Information about private rooming houses is furnished by the Student Housing Bureau, 209 Eddy Hall.

**Uniforms**—During the junior year, students are expected to provide white uniforms and white duty shoes for clinical practice.

## **Loans and Scholarships**

Information on scholarships and loans open to all University of Minnesota students is listed in the *Bulletin of General Information*. Further information may be obtained by writing the Bureau of Student Loans and Scholarships, 104 Wesbrook Hall. Information on local and national scholarships specific to occupational and physical therapy may be obtained through the respective offices, located in 860 Mayo Memorial Building.

# OCCUPATIONAL THERAPY

Occupational therapists use purposeful activities as treatment in the rehabilitation of persons with physical or emotional dysfunction. The therapist is a vital member of the rehabilitation team and works in consultation with physicians, physical and speech therapists, nurses, social workers, psychologists, vocational counselors, teachers, and other specialists.

The objectives of the patient's treatment program in occupational therapy are determined according to his individual needs. These objectives may include an evaluation of the patient's physical abilities before a specific program is devised to improve his condition through exercise and the use of adapted equipment. In the same way, it may be necessary to evaluate a patient's methods for handling his emotional problems before he can be helped in dealing with them more effectively. It can be said that the general aim of occupational therapy is to help patients help themselves to arrive at their highest level of independence through improvement of their physical, emotional, and social well-being.

The occupational therapy profession offers unlimited opportunities for qualified therapists because there are more available positions than there are therapists to fill them. Graduates are employed in rehabilitation centers, psychiatric, general, and children's hospitals, schools for the blind, deaf and exceptional children, and homes for the aged; some therapists work with home-bound patients.

The University of Minnesota offers an occupational therapy curriculum of 4¼ years including clinical affiliations. Upon completion of the prescribed curriculum, the students receive the degree of bachelor of science in occupational therapy.

The Course in Occupational Therapy is approved by the Council on Medical Education of the American Medical Association and the American Occupational Therapy Association. Graduates are eligible to become registered occupational therapists by taking the national registration examination given by the American Occupational Therapy Association. Registered occupational therapists are urged to become members of this organization, the purpose of which is to promote the use of occupational therapy, to advance standards of education and practice, to encourage research, and to engage in other activities advantageous to the profession and its members.

## Admission Requirements

Applicants for admission to the freshman and sophomore years of the Course in Occupational Therapy must meet the entrance requirements of the College of Liberal Arts. (For specific requirements and procedures see *Bulletin of General Information*.) Graduates of accredited high schools may enter at the beginning of any quarter, but the curriculum as outlined is based upon entrance in the fall quarter.

At the end of the sophomore year, students having a total of 90 quarter credits, including the required courses for occupational therapy or their equivalents, may make application for entrance into the Department of Physical

Medicine and Rehabilitation, College of Medical Sciences. Students who have completed 2 years of pre-occupational therapy should apply for admission to the professional school by contacting the Office of Admissions and Records of the University. They must make application and file complete transcripts with the Office of Admissions and Records before July 1 of the year in which they expect to enter the course as juniors. Selection of students will be based on scholastic standing (at least C+) and upon character and personal fitness as disclosed by an interview. Those accepted will transfer into the College of Medical Sciences, Department of Physical Medicine and Rehabilitation, Course in Occupational Therapy. Students attending schools other than the University of Minnesota during their freshman and sophomore years should communicate with the director of occupational therapy for assistance in program planning. Nonresidents should note section on Admission in the *Bulletin of General Information* for nonresidency requirements.

Each student must pass a physical examination. Any student who is not physically or emotionally able to do the work required of a therapist will not be accepted.

Further information relating to requirements and training may be obtained from the Occupational Therapy Office, 860 Mayo Memorial, University of Minnesota, Minneapolis, Minnesota 55455. Appointments may be made by calling 339-7311, extension 2721 or 2715.

## Curriculum

In order to be eligible for admission to the junior year of the Course in Occupational Therapy, a student must have completed the following courses during the freshman and sophomore years. It is important to note that some of these courses are offered only once a year.

### FRESHMAN YEAR

(Credits shown in parentheses)

<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Engl A (5)	Engl B (5)	Engl C (5)
(or) Comp 1 (4)	(or) Comp 2 (4)	(or) Comp 3 (4)
Biol 1 (5)	Biol 2 (5)	Anat 4 (5)
ArtH 1 (5)	Soc 1 or 3 (3)	Art 45 (3)
	Electives (see below)	PMed 1 (1)
		Electives (see below)

### SOPHOMORE YEAR

<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
ArEd 53 (3)	Psy 1 (3)	Psy 2 (3)
Ind 15 (3)	Phsl 2 (4)	PubH 3 (2)
GC 7C (5)	Ind 2 (4)	CPsy 80 (3)
PMed 3 (2)	Clas 48 (3)	(or) FamS 25 (3)
Electives (see below)	Electives (see below)	Ind 12 (3)
		PMed 5 (2)
		Electives (see below)

**Electives**—Students should elect courses to fulfill the requirements for the following categories under the system developed by the Council on Liberal Education:

**Communications, Language, Symbolic Systems** (a minimum of 9 credits)

- a. Foreign language
- b. Speech
- c. Philosophy
- d. Mathematics

**Artistic Expression** (a minimum of 9 credits)

- a. Art
- b. Humanities
- c. Theater arts
- d. Music
- e. Literature

**JUNIOR YEAR**

<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Anat 58 (5)	Psy 144 (3)	Psy 145 (3)
PMed 57 (1)	PMed 66 (1)	PMed 61 (5)
PMed 71 (2)	PMed 72 (3)	PMed 63 (1)
PMed 74 (3)	PMed 75 (3)	PMed 73 (3)
NPsy 171 A, B (4)	PMed 83 (5)	PMed 77 (5)
PMed 2 (1)	PMed 92 (3)	PMed 84 (3)

**TENTH QUARTER**

**Summer Terms I and II**

PMed 94—Clinical Training (18)

**SENIOR YEAR**

***Fall or Spring***

- PMed 55 (2)
- PMed 67 (2)
- PMed 76 (3)
- PMed 78 (3)
- PMed 93 (2)
- Electives

***Winter and Fall or Spring***

PMed 95-96 (18 per qtr)

# PHYSICAL THERAPY

## Admission Requirements

Applicants for admission to the freshman or sophomore year of the Course in Physical Therapy must meet the requirements of the College of Liberal Arts. It is recommended that prospective students take physics, chemistry, algebra, and geometry in high school. (See *Bulletin of General Information* for specific requirements and procedures for entrance to the College of Liberal Arts.) Graduates of accredited high schools may enter at the beginning of any quarter, but the curriculum as outlined is based upon entrance in the fall. During spring quarter of the sophomore year, University students should make application for transfer-of-college to the College of Medical Sciences. The sequence of courses in the professional school (the last 2 years) cannot be altered and must begin in the fall. Applications are also considered from students who have completed equivalent courses at other accredited colleges and universities. Transfer students from other schools should apply for admission with advanced standing to the Office of Admissions and Records, University of Minnesota, Minneapolis, Minnesota 55455 in accordance with the *Bulletin of General Information*. Applications for admission to the College of Medical Sciences should be made before May 15 of the year in which the student plans to enter the professional program. Due to limitations in class size, selection of students for the junior class will be completed by August 1.

Selection of students for the junior year will be based on scholastic standing (a minimum of C+ average in the basic science courses) and upon character and personal fitness as disclosed by personal interview. Each student must pass a physical examination in the University Health Service of the University of Minnesota.

Nonresidents should note the section on Admission in the *Bulletin of General Information* for nonresidency requirements.

Specific information relating to requirements and training may be obtained from the Physical Therapy Office, 860 Mayo Memorial Building, University of Minnesota, Minneapolis, Minnesota 55455. Telephone 339-7311, extension 2721.

## Curriculum

In order to be eligible for admission to the junior year of the Course in Physical Therapy, a student must have completed all courses and credits in items 1 and 2:

(Credits shown in parentheses)

1. Freshman Composition—a minimum of 9 quarter credits.
2. Physical and Biological Sciences
  - General Biology (10)
  - Elementary Human Anatomy (5)
  - Human Physiology (4-5)
  - General Inorganic Chemistry (10)

Physics (5-6)

Personal and Community Health (2-4)

3. 45 quarter credits with a minimum of 9 quarter credits in each of the following categories:

a. Man and Society:

Psychology (9 qtr cr incl General Psychology required for Course in Physical Therapy)

Sociology

Social science

Anthropology

History

Political science

Economics

b. Communication, Language, and Symbolic Systems:

Foreign language

Speech

Philosophy

Mathematics

c. Artistic Expression:

Art

Humanities

Theater arts

Literature

Registration for the freshman and sophomore years at the University of Minnesota takes place in the College of Liberal Arts. During these years students are subject to the regulations of that college. To make certain that all prerequisite courses are completed on time, students should submit a tentative program each quarter for approval by a faculty adviser in the Department of Physical Medicine and Rehabilitation.

The professional training program in physical therapy consists of 2 academic years in the College of Medical Sciences, Medical School, Department of Physical Medicine and Rehabilitation. Upon successful completion of all degree requirements, the student receives the degree of bachelor of science in physical therapy.

The following program is suggested in order to include courses which are offered only once a year:

**FRESHMAN YEAR**

(Credits shown in parentheses)

<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Engl A, Comp 1, or Comm 1 (4-5)	Engl B, Comp 2, or Comm 2 (4-5)	Engl C, Comp 3, or Comm 3 (4-5)
Biol 1 (5)	Biol 2 (5)	Anat 4 (5)
Electives	Electives	PMed 2A (1)
		PubH (2)
		Electives



*Department of Physical Medicine and Rehabilitation*

---

**SOPHOMORE YEAR**

*Fall*

InCh 4 (5)  
Phys 1 (3)  
Psy 1 (3)  
Electives

*Winter*

InCh 5 (5)  
Phys 2 (3)  
Psy 2 (3)  
Phsl 51 (5)

*Spring*

Psychology (3)  
Electives

**JUNIOR YEAR**

*Fall*

Anat 58 (5)  
PMed 50 (2)  
PMed 57 (1)  
PMed 60A (6)  
Clas 68 (3)

*Winter*

PMed 4 (1)  
PMed 58 (2)  
PMed 70 (3)  
PMed 82 (3)  
PMed 83 (5)  
PMed 97 (2)

*Spring*

Path 60 (3)  
PMed 61 (5)  
PMed 63 (1)  
PMed 80A (2)  
PMed 81A (2)  
PMed 87 (3)

**SENIOR YEAR**

*Fall*

NPsy 171A (2)  
NPsy 171B (2)  
PMed 80B (2)  
PMed 81B (3)  
PMed 85 (3)  
PMed 88 (3)  
PMed 90 (1)  
PMed 100 (3)

*Winter*

PMed 60B (3)  
PMed 64 (1)  
PMed 68 (3)  
PMed 80C (2)  
PMed 81C (2)  
PMed 98 or elective (3)

*Spring*

PMed 89 (18)  
PMed 91 (1)

# DESCRIPTION OF COURSES

## Physical Medicine and Rehabilitation (PMed)

1. **Introduction to Occupational Therapy.** Orientation. Films showing hospital occupational therapy programs. Tours of hospitals and rehabilitation centers. Discussion and reports following trips. (1 cr)
- 2A. **Orientation to Physical Therapy and Rehabilitation.** History of the profession; survey of the role of the physical therapist; job opportunities; field trips to hospital departments. (1 cr; prereq #)
- 2B. **Orientation to Physical Therapy and Rehabilitation.** Physical therapy and rehabilitation procedures; techniques of application; observation of treatment in the physical therapy clinic. (1 cr; for OT students)
3. **Orientation to Occupational Therapy.** Survey of the profession through lectures, films, and tours. Methods of treatment including demonstrations. Observation in clinics. (2 cr)
4. **Orientation to Occupational Therapy.** Introduction to treatment techniques and their application. Observation of treatment in occupational therapy clinics. (1 cr; for PT students)
5. **Therapeutic Recreation.** Instruction in application of recreational activities for hospital and convalescent patients. (2 cr)
50. **Physics for Physical Therapy.** Mechanics, heat, light, and electricity as applied to physical therapy. Lectures and demonstrations. (2 cr)
55. **Process of Rehabilitation.** Public laws; community agencies; job opportunities and trends; rehabilitation programs relating to handicapped persons. (2 cr)
57. **Ethics.** Professional orientation and medical ethics for occupational and physical therapy students. (1 cr)
58. **Bandaging, Aseptic, and Isolation Techniques.** Methods and principles of bandaging, splinting, and taping; medical asepsis for cleansing and dressing of wounds; isolation procedures for contagious diseases. Laboratory practice. (2 cr)
- 60A. **Theory and Techniques of Thermo-, Photo-, and Hydro-therapy.** Physiological effects of therapeutic treatment using heat, light, sound, and water; medical indications and contraindications; principles of application. Laboratory instructions in techniques of application. (6 cr)
60. **Theory and Technique of Electrotherapy.** Lectures, demonstrations, and student practice of applications and uses of low volt currents. (3 cr)
61. **Theory and Technique of Physical Medicine and Rehabilitation Applied to Medical Sciences.** Lectures include related fields of surgery, orthopedics, pediatrics, dermatology, medicine, neurology, and speech. (5 cr)
63. **Junior Clinic in Physical Medicine and Rehabilitation.** Correlation clinic. Presentation of hospital patients with emphasis on therapeutic problems to be treated by occupational and physical therapists. (1 cr; prereq #61)
64. **Senior Clinic in Physical Medicine and Rehabilitation.** (1 cr)
66. **Introduction to Scientific Literature.** Use of source material; evaluation of medical literature; elementary statistics; techniques of scientific writing. (2 cr; for OT students)

**Department of Physical Medicine and Rehabilitation**

---

67. **Methods of Scientific Research.** Fundamentals of research design; evaluation and presentation of data; preparation of manuscript. (2 cr; prereq 66)
68. **Applied Anatomy.** Review of joint structures, muscles, nerves, and function. Diseases and injuries causing impairment of function and deformities are presented and correlated with physical medicine and rehabilitation. (3 cr)
70. **Theory and Technique of Massage.** Methods of applying various types of massage; therapeutic indications; physiological effects. Lectures, demonstrations, and student practice. (3 cr)
71. **Theory of Occupational Therapy.** The practical application of occupational therapy in the major medical fields. Professional ethics and etiquette. Organization and administration. Interdepartmental relationships. (2 cr)
72. **Theory of Occupational Therapy.** Principles of treatment in pediatrics and geriatrics; for the blind and the deaf and for patients with medical and surgical conditions. (3 cr)
73. **Theory of Occupational Therapy.** Treatment of psychiatric patients. Application of theory through problem solving and laboratory experiences. (3 cr)
- 74-75. **Techniques of Occupational Therapy.** Laboratory instruction in craft skills; adaptation of these to specific disabilities. (3 cr per qtr)
76. **Techniques of Occupational Therapy.** Laboratory instruction in the operation of power woodworking equipment; safety precautions and maintenance of power tools. (3 cr)
77. **Study of Physical Dysfunction.** Techniques of evaluation and treatment of patients with physical disabilities. Lecture and laboratory. (5 cr)
78. **Group Process Seminar.** Experience in group development; analysis of group behavior and member roles. (3 cr)
- 80A, B, C. **Theory of Therapeutic Exercise.** Lectures and demonstrations of the fundamental principles of physiology, physics, and neurology as a basis for therapeutic exercise. (6 cr)
- 81A, B, C. **Techniques of Therapeutic Exercise.** Laboratory instruction in the application of the principles and techniques of therapeutic exercise. (7 cr; prereq ¶80)
82. **Physiology of Muscles, Nerves, and Circulation.** Specific physiological basis for physical therapy. (3 cr)
83. **Theory and Technique of Muscle Function.** Review of muscles and joints in regard to anatomical and physiological function; analysis of body mechanics, co-ordinated movement, and strength. Lectures, demonstration, and laboratory practice. (5 cr)
84. **Rehabilitation Procedures.** Theoretical and practical knowledge of activities of daily living as they apply to occupational therapy. Lectures, demonstrations, and practice. (3 cr)
85. **Rehabilitation Procedures.** Theoretical and practical application of principles used in activities of daily living, ambulation and functional activities as they relate to the patient and his specific disability. (3 cr)
- 87-88. **Clinical Training in Physical Therapy.** Application of techniques under supervision of the physical therapy departments of affiliated hospitals. (3 cr per qtr)
89. **Clinical Training in Physical Therapy.** Full-time supervised training in affiliated hospitals. One quarter. (18 cr)

*Description of Courses*

---

- 90-91. Senior Conference.** Discussion of problems arising during clinical training. (1 cr per qtr)
- 92. Preliminary Hospital Practice in Occupational Therapy.** Supervised preclinical experience in the University Hospitals. (3 cr)
- 93. Orientation to Work Evaluation.** Clinic experience in the University Rehabilitation Center. Introduction to job analysis and the techniques of job sampling. Field trips to industry. (2 cr)
- 94-95-96. Clinical Training in Occupational Therapy.** A total of 9 months of supervised training in affiliated hospitals. (18 cr per qtr)
- 97. Introduction to Scientific Research.** Use of source material; evaluation of medical literature; fundamentals of research design; elementary statistics; techniques of scientific writing. (2 cr; for PT majors)
- 98. Special Problems in Physical Therapy.** Opportunity to participate in selected research projects. (Cr ar; prereq 97)
- 100. Psychological Factors in Rehabilitation.** This course addresses the problems of the rehabilitation worker in a medical setting who must understand the psychological problems of the disabled patient. (3 cr)

# UNIVERSITY OF MINNESOTA BULLETIN

SCHOOL OF  
DENTISTRY  
1966-68



# 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.

## Board of Regents

The Honorable Charles W. Mayo, M.D., Rochester, First Vice President and Chairman; The Honorable Marjorie J. Howard (Mrs. C. Edward), Excelsior, Second Vice President; The Honorable Daniel C. Gainey, Owatonna; The Honorable Bjarne E. Grottum, Jackson; The Honorable Albert V. Hartl, Fergus Falls; The Honorable Robert E. Hess, White Bear Lake; The Honorable Fred J. Hughes, St. Cloud; The Honorable Lester A. Malkerson, Minneapolis; The Honorable William K. Montague, Duluth; The Honorable George W. Rauenhorst, Olivia; The Honorable Otto A. Silha, Minneapolis; The Honorable Herman F. Skyberg, Fisher.

## Administrative Officers

O. Meredith Wilson, Ph.D., President  
William G. Shepherd, Ph.D., Vice President, Academic Administration  
Laurence R. Lunden, B.A., Vice President, Business Administration  
Stanley J. Wenberg, M.A., Vice President for Educational Relationships and Development  
Robert Edward Summers, M.S.(Ch.E.), M.E., Dean of Admissions and Records  
Edmund G. Williamson, Ph.D., Dean of Students

## SCHOOL OF DENTISTRY

### Administration

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

---

Volume LXIX, Number 18

September 15, 1966

### UNIVERSITY OF MINNESOTA BULLETIN

Published semimonthly January 1 to December 15 inclusive. Second-class postage paid at Minneapolis, Minnesota. Send change of address notices and other communications to Office of Admissions and Records, University of Minnesota, Minneapolis, Minnesota 55455.

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 founded in 1851 by an act of the Minnesota territorial legislature. In 1868, 6 years after the Morrill Act was passed, the University was allotted public land in proportion to its representation in Congress. The School of Dentistry was established by the University in 1888 and became a separate educational unit of the University in 1892.

### Facilities

The School of Dentistry has been housed in five different buildings since its beginning. Now it is 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. It is adjacent to the main University of Minnesota Hospitals and the teaching and research laboratories of the basic medical sciences. This center provides 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 Hospitals, the basic medical science subjects, and 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.

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 main 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 its total resources and to dedicate its entire efforts toward total and continuing advance-

## *School of Dentistry*

---

ment 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 biologic 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 an 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, 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 continuation education for dental practitioners and related health professionals.
11. To integrate the teaching programs of the school with those of the College of Medical 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 biologic 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 co-operate 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 dental 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 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 both men and women. A freshman class is admitted only 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.

## School of Dentistry

---

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, co-operativeness, 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. While acceptance is based primarily on quality of performance, applicants with a broad liberal education are looked on with favor. This special consideration of students with 3 or more years of liberal arts study will be given particular emphasis beginning fall 1968.

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 12 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 have to be made. Courses in biology, chemistry, and physics will usually be considered outdated if taken more than 5 years prior to time of application.

1. English—12 quarter credits. If the basic English course is less than 12 quarter credits, additional credits can be completed in composition, literature, speech, or etymology to satisfy the minimum requirement of 12 quarter credits.
2. Biology or zoology—10 quarter credits.
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.

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 recom-

mended: (1) Communication, language, symbolic systems; (2) Physical and biological sciences; (3) Man and society; (4) Artistic expression.

Students are requested to select the following preferred electives if at all feasible: mathematics (at least to the level of college algebra), 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 A-B-C (15 qtr cr) or Comp 1-2-3 (12 qtr cr); or Comm 1-2-3 (12 qtr cr)
2. Biol 1-2 (10 qtr cr)
3. GeCh 4-5, 6 (14 qtr cr)
4. OrCh 61-62 (10 qtr cr)
5. Phys 1-2-3 and 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 10, 10A, 15, 40; Psy 1 and 2; Spch 5; Zool 53; Gen 66; Art 20; AnCh 57; and Clas 48.

**Dental Aptitude Test**—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 or zoology 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

## *School of Dentistry*

---

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.

**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).

**Letters of Recommendation**—Applicants are requested to have only one letter of recommendation submitted. This letter should be from a college counselor, religious leader, or some other appropriate respected citizen who is closely familiar with the applicant. The letter should contain information on the recommender's judgment of the applicant's moral character, integrity, personality, industry, stability, co-operativeness, maturity, and leadership ability. As indicated on the application form, the student is requested to list one other name of a responsible person from whom the Admissions Committee could request an additional letter of reference.

### **Application Procedures**

**General**—Application blanks 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 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) .....		27.00
(For privileges such as the Coffman Memorial Union, the Health Service, and the Minnesota Daily)		
Graduation fee:		
Large diploma .....		15.00
Small diploma .....		10.00

## School of Dentistry

---

### 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 located near the campus. Books may be obtained from the Professional Colleges Bookstore in the Main Engineering Building or from other nearby bookstores.

Many curricular changes were made in the 4-year D.D.S. program in 1964-65 and 1965-66. Additional revisions will be made in 1966-67. Therefore, the following estimates of costs for equipment, books, supplies, and laboratory fees are listed for the 1967-68 school year.

	Instruments	Books	Materials and Gowns	Laboratory Fees	Totals
Freshman year .....	\$ 560	\$167	\$ 21	\$14	\$ 762
Sophomore year .....	865	130	95	6	1,096
Junior year .....	475	130	17	3	625
Senior year .....	81	24	.....	.....	105
Totals .....	<u>\$1,981</u>	<u>\$451</u>	<u>\$133</u>	<u>\$23</u>	<u>\$2,588</u>

### 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 104 Wesbrook Hall, 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. Health Professions Student Loan Fund sponsored by the Federal government.

3. Special bank fund for junior and senior students sponsored by the Minnesota State Dental Association.
4. United Student Aid Fund sponsored by commercial banks in consultation with the Bureau of Student Loans and Scholarships.
5. 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  
Delta Sigma Delta Loan Fund  
1936 Dental Memorial Fund  
Dental Students Loan Fund sponsored by Dr. Oscar C. Nord  
Duluth District Dental Society Auxiliary  
International College of Dentists  
Minneapolis District Dental Society Auxiliary  
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  
Undergraduate Summer Research Fellowships sponsored by the United States Public Health Service, the Minnesota Dental Research Foundation and other special funds  
University of Minnesota Bookstore Scholarships

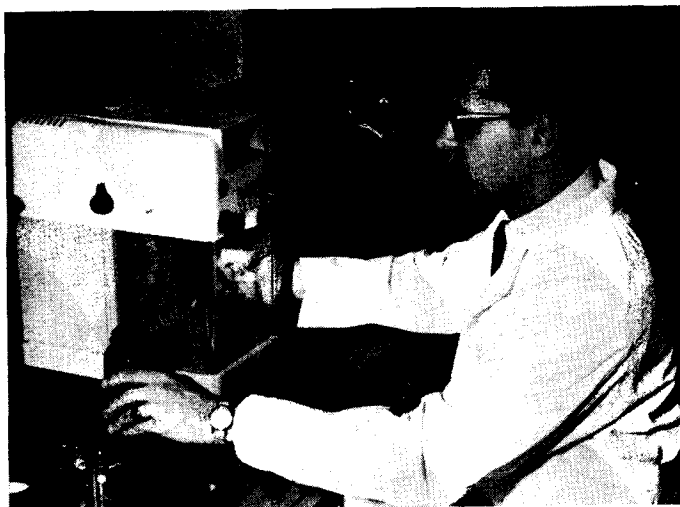
### *Special Awards and Honors*

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

#### **Ability and Promise in Pre-clinical and Clinical Dentistry**

*Sponsors:*

Academy of General Dentistry  
American Academy of Dental Medicine



*Undergraduate Dental Student in Research Fellowship Program*

American Academy of Gold Foil Operators  
American Academy of Oral Roentgenology  
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 Orthodontists  
Minnesota Unit of American Society of Dentistry for Children  
Periodontics Award of Lactona Products Division

**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 Auxiliary

**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 University Employment Bureau 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.

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 School of Dentistry Newsletter* which is published each quarter and distributed to all 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. For a nominal membership fee, the students receive the *Journal of the American Dental Association* and can participate in the insurance programs of the association. Almost all the students become members of the 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 December while Part II is generally taken in April by the senior students. Virtually all of the students elect to take these written examinations which are recognized by the Licensing Boards in 40 states.

### **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.

## ***School of Dentistry***

---

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 two 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 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 the Upper Division courses.

The Arts College credits must include a minor and 14 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 *Bulletin of the College of Liberal Arts*) 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. Such students must make formal application on the blank provided, 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.

## **School of Dentistry**

---

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. They must present formal credentials for their entire educational record. There is a fee of \$10, payable in advance, to have these credentials evaluated.
3. 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.
4. There must be a personal interview.
5. Under no circumstances will advanced standing be granted beyond the beginning of the junior year.
6. 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.
7. 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.
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 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.

### **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, 100 Wesbrook Hall, University of Minnesota, 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 1966-67 rates will range from \$275-\$320 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, 100 Wesbrook 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.

## *School of Dentistry*

---

### *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 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 1966-67 rates are \$70 and \$80 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 \$62.50 and \$70 per month (1966-67) 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.

### *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 Bio-Medical Library in Diehl Hall is located 1 block south of the School of Dentistry building. It includes the former college and departmental libraries in zoology, botany, dentistry, medicine, pediatrics, and much of pharmacy. 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 170,000 volumes, 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.

### **Continuation Study Program**

The School of Dentistry regularly offers a series of continuation courses in various phases of dentistry and dental hygiene. These courses are intended to meet the needs of the profession for special material not covered in the undergraduate curriculum and in new developments in research and clinical procedures. Sessions usually are 3 days to 1 week in duration, and in many areas 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 the Department of Conferences and Institutes, Nolte Center for Continuing Education, University of Minnesota, Minneapolis, Minnesota 55455.

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

Numerous changes were made in our 4-year D.D.S. curriculum during the 1964-65 and 1965-66 academic years. Additional revisions will be implemented in 1966-67. The purposes of these changes are to develop a more biologic and scientific basis for the instruction, integrate more fully the basic medical sciences and clinical subjects, expand dental educational programs in hospitals, place considerably more emphasis in preventive dentistry, and provide more opportunities for experience in team dentistry. While the curriculum contains a prescribed sequence of courses, increasing opportunities for electives and special programs are being developed for the undergraduate students. The following outline of the 4-year program in dentistry is for the 1967-68 academic year.

# School of Dentistry

## 1967-68 FOUR-YEAR PROGRAM IN DENTISTRY

	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	4	80			8	160
Dent 52—Biomaterials .....					2	20	2	20
Dent 52L—Biomaterials Laboratory .....					2	60	2	60
Dent 65—Orientation to Oral Health Science .....		40						40
Dent 66—Preventive Dentistry I: Philosophy and Concepts .....	2	20					2	20
Dent 67—Preventive Dentistry II: Philosophy and Concepts .....			1	10			1	10
Dent 72—Introduction to Occlusion .....					2	30	2	30
Dent 95—Periodontics .....					2	30	2	30
Anat 105—Microscopic Anatomy .....	6	100					6	100
Anat 108-109—Gross Human Anatomy for Dental Students .....			6	120	6	120	12	240
MdBc 104-105—Medical Biochemistry for Dental Students .....	5	50	7	110			12	160
MicB 100—Microbiology for Dental Students .....					6	90	6	90
Dent 176—Preventive Dentistry III: Philosophy and Concepts .....					1	10	1	10
	17	290	18	320	21	360	56	970
<b>Sophomore Year</b>								
Dent 60-61—Dental Prosthetics .....			3	70	2	40	5	110
Dent 75-76-77—Crown and Bridge Technic .....	3	70	4	100	4	100	11	270
Dent 80—Oral Diagnosis .....					1	10	1	10
Dent 81—Roentgenology .....					2	20	2	20
Dent 83—Genetics: An Introduction for Dental Students .....	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 90—Anesthesia .....					1	10	1	10
Dent 96—Periodontics .....	2	30					2	30
Dent 100—Development of Occlusion .....	3	50					3	50
Anat 110—Human Neuroanatomy .....	3	40					3	40
Phsl 101—Human Physiology .....			8	120			8	120
Path 100—Pathology for Dental Students .....					8	130	8	130
Phcl 101—Introduction to Pharmacology .....					1	10	1	10
	16	300	19	390	19	320	54	1010
<b>Junior Year</b>								
Dent 70—Dental Prosthetics .....	1	10					1	10
Dent 70L—Dental Prosthetics Laboratory .....	2	60					2	60
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—Introduction to Dental Literature .....					1	10	1	10
Dent 120-122—Crown and Bridge .....	1	10			1	10	2	20



## Dentistry

	Fall Qtr		Winter Qtr		Spring Qtr		Total	
	Cr	Hrs	Cr	Hrs	Cr	Hrs	Cr	Hrs
Dent 120C-121C-122C—Crown and Bridge Clinic	2	60	2	60	2	60	6	180
Dent 130—Oral Diagnosis					2	20	2	20
Dent 132C—Roentgenology Clerkship					1	30	1	30
Dent 142—Operative Dentistry					2	20	2	20
Dent 140C-141C-142C—Operative Dentistry	3	90	3	90	3	90	10	270
Dent 144—Endodontics			2	20			2	20
Dent 150—Introduction to Oral Surgery					1	10	1	10
Dent 161-162—Oral Pathology			3	40	3	40	6	80
Dent 170-171—Pedodontics	1	10	1	10			2	20
Dent 172C—Pedodontics Clinic					1	30	1	30
Dent 181-182—Periodontics			1	10	1	10	2	20
Dent 181C-182C—Periodontics Clinic			1	30	1	30	2	60
Phcl 102—General Pharmacology	6	80					6	80
Phcl 108—Dental Therapeutics			1	10			1	10
	19	390	17	340	21	420	58	1150
<b>Senior Year</b>								
Dent 105—Orthodontics	2	20					2	20
Dent 115C-116C-117C—Dental Prosthetics Clinic	2	60	2	60	2	60	6	180
Dent 125C-126C-127C—Crown and Bridge Clinic	2	60	2	60	2	60	6	180
Dent 127-128-129—Seminar: Restorative Dentistry	1	10	1	10	1	10	3	30
Dent 135—Oral Medicine	2	20					2	20
Dent 137C—Oral Diagnosis Clinic					1	30	1	30
Dent 138—Diagnostic Oral Roentgenology			1	10			1	10
Dent 145C-146C-147C—Clinical Operative Dentistry	2	60	3	90	2	60	7	210
Dent 149—First Aid					1	10	1	10
Dent 155-156—Oral Surgery	2	20	2	20			4	40
Dent 157C—Oral Surgery and Hospital Clinics					3	90	3	90
Dent 165—Oral Biology: Fundamental and Applied			2	20			2	20
Dent 173C—Pedodontics Clinic			3	90			3	90
Dent 174C—Pedodontics Adolescent Clinic					1	30	1	30
Dent 177—Community Communication			2	20			2	20
Dent 185—Periodontics	1	10					1	10
Dent 185C-186C—Periodontics Clinic	1	30	1	30			2	60
Dent 195-198-199—Dental Jurisprudence and Ethics	2	20	1	10	1	10	4	40
Dent 196—Practice Management					1	10	1	10
Dent 197—Professional Orientation			1	10			1	10
	17	310	21	430	15	370	53	1110

**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.  
Charles B. McAllister, D.D.S.

*Assistant Professor*

Robert D. Jeronimus, D.D.S., M.S.

*Clinical Assistant Professor*

Robert R. Hoover, D.D.S.  
Rad M. Jevric, D.D.S.

George D. MacGibbon, D.D.S.  
Eugene A. Moll, D.D.S.

*Professorial Lecturer*

Herman A. Garmers, D.D.S.

*Clinical Instructor*

Jerome D. DuLac, D.D.S.  
George A. LeMay, D.D.S.  
Clifford T. Maesaka, D.D.S.  
Kenneth D. Salo, 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, free-hand and investment soldering, and the construction of a lower hygienic bridge, an upper posterior bridge, upper and lower anterior bridges, and a porcelain jacket crown. Weekly lectures cover laboratory technics, fundamental principles, and the science of dental materials in regard to metals, waxes, investments, cements, etc. An illustrated syllabus aids students in carrying out each project. (3-4-4 cr per qtr; 270 lab and lect hrs) Serr and staff
- 120. Crown and Bridge.** History of crown and bridge work, interpretations and objectives of the course, definitions and nomenclature, aims of the service, diagnosis, a consideration of types of abutment, retainers, and pontics. (1 cr; 10 lect hrs) Yock
- 122. Crown and Bridge.** Ceramics and resins as related to aesthetics in clinical restorative dentistry. Illustrated lectures covering the physical and chemical properties, the indications for use and the manipulation of porcelain and plastics in their practical application. (1 cr; 10 lect hrs) Yock and staff
- 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 crown and bridge prosthetics together with instruction in the diagnosis, designing, and construction of more complicated cases. (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, and prosthetic dentistry which overlap in technical procedures and biological concepts. (1 cr; 10 lect hrs) Yock, Jensen, Morstad

Division of Human Oral Genetics

Professor

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

Assistant Professor

C. Roberto Umama, M.D., Ph.D.

Associate Professor

Burton L. Shapiro, D.D.S., M.S.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 and staff

Division of Operative and Endodontics Dentistry

Professor

James R. Jensen, D.D.S., M.S.D., chairman  
John W. Wakely, D.D.S., M.S.

Carl J. Olson, D.D.S., M.S.D.  
Anthony D. Romano, D.D.S.  
Arthur R. Schmidt, D.D.S.

Associate Professor

Anna T. Hampel, D.D.S., M.S.D.

Clinical Instructor

Anthony F. Antoncich, D.D.S.  
William C. Bender, D.D.S.  
Raymond A. Hellickson, D.D.S.  
Donald G. McMillan, D.D.S.  
Thomas H. Rollin, D.D.S.  
John W. Thibido, 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.  
Edgar F. Ziegler, 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.

Clinical Assistant Professor

Kenneth J. Buechele, D.D.S.  
Kenji Horita, 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. (3 cr per qtr; 60 lect 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. (2 cr; 20 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 close supervision of staff. (3 cr per qtr; 270 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

## School of Dentistry

---

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 hrs) Jensen and staff

- 129. Seminar: Restorative Dentistry.** Correlated series of lectures on the clinical approach to crown and bridge, operative and prosthetic dentistry which overlap in technical procedures and biological concepts. (1 cr; 10 lect hrs) Jensen, Morstad, Yock



*Undergraduate Dental Student in Preclinical Laboratory*

### Division of Oral Anatomy and Histology

*Professor*

Ambert B. Hall, D.D.S., chairman

*Associate Professor*

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

*Clinical Associate Professor*

Robert J. Jacobsen, D.D.S.

*Assistant Professor*

John M. Grewe, D.D.S., M.S.D., Ph.D.

*Clinical Assistant Professor*

Cory H. Kruckenberg, D.D.S.

*Clinical Instructor*

Charles H. Buscher, D.D.S.

James R. Folske, D.D.S.

Peter M. Holm, D.D.S.

Eric G. Schleder, D.D.S., M.S.

- 50-51. Oral Anatomy and Histology.** *Lectures:* dental nomenclature with special attention to etymology and application of terms used in the 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. (4-4 cr; 120 lab and 40 lect hrs) Hall, Grewe, and staff

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

*Professor*

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

*Clinical Associate Professor*

William O. Branstad, D.D.S.

*Assistant Professor*

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

*Clinical Assistant Professor*

Harold J. Panuska, D.D.S., M.S.D.  
George C. Porteous, D.D.S.

*Clinical Instructor*

John S. Bacon, D.D.S.

*Lecturer*

H. Dawes Miller, M.D.

80. **Oral Diagnosis.** Oral examinations, methods of investigation, and recording of clinical data. (1 cr; 10 lect hrs) Panuska, Yamane
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 of oral lesions, its natural history and treatment of these lesions. (2 cr; 20 hrs) Yamane and staff
- 132C. **Roentgenology Clerkship.** Students serve regular clerkships in Division of 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; 36 clin hrs) Yamane, Petersen
135. **Oral Medicine.** Oral manifestations of systemic and local diseases. Small group conferences on laboratory procedure for diagnostic purposes are arranged. (2 cr; 20 lect and 12 clin hrs) Miller, Yamane, and staff
- 137C. **Oral Diagnosis Clinic.** Students serve clerkships in the Division of 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

*Associate Professor*

Burton L. Shapiro, D.D.S., M.S.D., Ph.D.  
Robert A. Vickers, D.D.S., M.S.D.

*Assistant Professor*

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

*Clinical Assistant Professor*

John N. Trodahl, D.D.S., M.S.D.

## *School of Dentistry*

---

**161-162. Oral Pathology.** Lectures and laboratory work covering the histology 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. (3-3 cr; 32 lect and 16 lab hrs) Gorlin and staff

### **Division of Oral Surgery**

#### *Professor*

Henry B. Clark, Jr., M.D., D.D.S., chairman  
Mellor R. Holland, D.D.S., M.S.D.  
Norman O. Holte, D.D.S., M.S.D.

#### *Clinical Associate Professor*

Angus R. Stoesz, D.D.S., M.S.D.

#### *Clinical Assistant Professor*

George W. Carroll, D.D.S., M.S.

- 90. Anesthesia.** Lecture course on local and general anesthesia. (1 cr; 10 lect hrs) Holte, Holland
- 150. Introduction to Oral Surgery.** Introductory principles and practice of minor oral surgery. Indications for tooth removal, operative technique, precautions against accident, and postoperative care. (1 cr; 10 lect hrs) Holte, Holland
- 155. Oral Surgery.** Technique of removal of unerupted teeth, alveolectomy, tooth removals in children and in patients with systemic disease. Procedure for working in the hospital operating room is discussed. Consideration is given to the correlation of the basic sciences of anatomy, pathology, and physiology to



*Graduate and Undergraduate Dental Students in Hospital Operating Room—Patient Being Prepared for Oral Surgery*

oral surgery in the matters of examinations, diagnosis, and the treatment of jaw infections and injuries. (2 cr; 20 lect hrs) Clark and staff

**156. Oral Surgery.** (Continuation of Dent 155) The following special conditions are discussed and illustrated by lantern slides and motion pictures; wounds of soft tissues, fractures of the jaws, cysts and benign tumors, diseases of the maxillary sinus, deformities of the mouth and jaws, special infections, and affections of the nerves of the oral cavity and adjacent regions. (2 cr; 20 lect hrs) Clark and staff

**157C. Oral Surgery and Hospital Clinics.** In junior year, five periods are spent in observation and assisting in the Oral Surgery Clinic. In senior year, 20 periods are devoted to the actual practice of tooth removal, alveolectomy, taking of biopsies, and other commonly encountered oral surgical conditions. Experience with unerupted teeth, cysts, fractures, maxillary sinus infections, and other more complicated conditions is gained by assisting and observation. Ten periods are devoted to demonstrations, observation, clinics, and conferences in the University Hospitals. (3 cr; 90 clin hrs) Clark and staff

### Division of Orthodontics

*Professor*

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

*Clinical Professor*

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

*Clinical Associate Professor*

Theodore T. Edblom, D.D.S., M.S.D.  
Charles D. Simpson, D.D.S., M.S.D.

*Clinical Assistant Professor*

James W. Monson, D.D.S., M.S.D.  
Richard C. Paulson, D.D.S., M.S.D.  
Frank W. Worms, D.D.S., M.S.D.

*Instructor*

Michael M. Speidel, D.D.S.

*Lecturer*

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. (3 cr; 20 lect and 30 lab hrs) Isaacson

**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 Pedodontics

*Assistant Professor*

John M. Grewe, D.D.S., M.S.D., Ph.D.,  
acting chairman

*Clinical Associate Professor*

Kenneth C. Erickson, D.D.S.

*Clinical Assistant Professor*

Jack L. Anderson, D.D.S.  
Robert J. Boller, D.D.S., M.S.D.

Freeman N. Rosenblum, D.D.S., M.S.D.

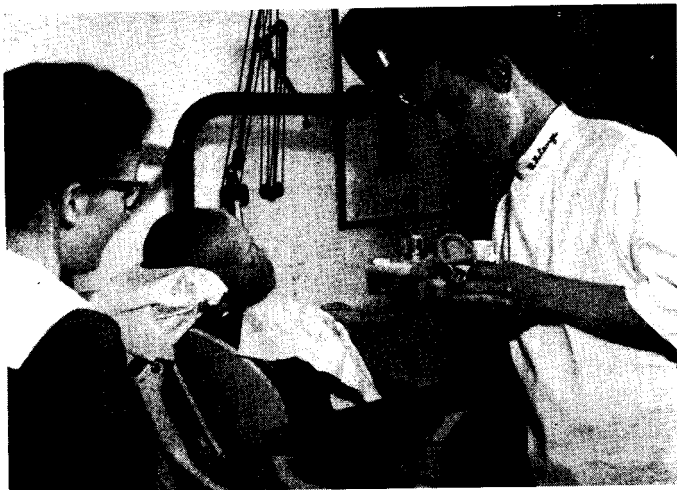
Marion R. White, D.D.S.

*Clinical Instructor*

Richard T. Ford, D.D.S.  
Laurence A. Garfin, D.D.S.  
Bruce M. Nelson, D.D.S.  
Lowell F. Sorenson, D.D.S.  
James A. Swenson, D.D.S.

**170. Pedodontics.** Principles of child psychology, anesthesia, diagnosis, treatment planning and preventive procedures in pedodontics. (1 cr; 10 lect hrs) Grewe

**171. Pedodontics.** Types and applications of preventive, interceptive, and restorative procedures during the stages of deciduous and mixed dentition. Reading assignments cover current and appropriate literature. (1 cr; 10 lect hrs) Grewe



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

- 172C. Pedodontics Clinic.** Clinical practice in examinations, diagnosis, treatment plans, prophylaxis, patient-parent consultations along with the completion of all indicated preventive, interceptive, and restorative procedures. (1 cr; 30 clin hrs) Grewe and staff
- 173C. Pedodontics Clinic.** Clinical practice of pedodontics with emphasis on diagnosis and treatment of more difficult problems. Introduction of hospital procedures as related to pedodontics. (3 cr; 90 clin hrs) Grewe and staff
- 174C. Pedodontics Adolescent Clinic.** Clinical practice of preventive and multiple restorative procedures for adolescent children. (1 cr; 30 clin hrs) Grewe and staff

### **Division of Periodontics**

*Professor*

Richard E. Stallard, D.D.S., M.S.D., Ph.D.,  
chairman  
Erwin M. Schaffer, D.D.S., M.S.D.

*Clinical Associate Professor*

Marmion W. Houglum, D.D.S., M.S.D.  
George C. Lawther, D.D.S., M.S.D.

*Assistant Professor*

Ronald E. LaBelle, D.D.S., M.S.D.

*Clinical Assistant Professor*

William L. Hartwick, D.D.S.  
Willis B. Irons, D.D.S., M.S.D.  
Norman A. Korn, D.D.S., M.S.D.  
Eric E. Stafne, D.D.S., M.S.D.

*Clinical Instructor*

Gregory R. Stende, D.D.S.

- 95. Periodontics.** Introduction to periodontal disease including clinical instruction in dental prophylaxis. (2 cr; 30 hrs) Stallard and staff



96. **Periodontics.** (Continuation of Dent 95) Includes treatment of gingivitis. Concepts of occlusion are also included. (2 cr; 30 hrs) Stallard and staff
- 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; 20 hrs) Korn, LaBelle, Stallard
- 181C-182C. **Periodontics Clinic.** Clinical practices in the treatment of diseases affecting the investing tissues of the teeth. (1 cr per qtr; 60 clin hrs) LaBelle and staff
185. **Periodontics.** Continuation of previous lectures with emphasis on the occlusal factors and surgical therapy. (1 cr; 10 lect hrs) LaBelle, Korn, Stallard
- 185C-186C. **Periodontics Clinic.** Clinical treatment of periodontal disease. (1 cr per qtr; 60 clin hrs) LaBelle and staff

### Division of Preventive Dentistry

*Associate Professor*

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

*Clinical Assistant Professor*

Jack L. Anderson, D.D.S.  
Laurence A. Garfin, D.D.S.  
Esther King, D.D.S.

*Professorial Lecturer*

Irving R. Brand, LL.B.

*Instructor*

Carl L. Bandt, D.D.S., M.S.D.  
James B. Kenney, M.A.

*Lecturer*

Robert T. Flint, M.A.  
William A. Jordan, D.D.S., M.P.H.

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 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
- 176 (also PubH 76). **Preventive Dentistry III: Philosophy and Concepts.** Introduction to public health procedures with special emphasis on community attitudes toward medical and dental care. Recent changes in public health programs and their effect on dental practice will be discussed. (1 cr; 10 lect hrs) Meskin and staff
115. **Introduction to Dental Literature.** A series of biostatistical lectures and group discussions will focus on the need to critically examine material presented in the dental literature for its design, content, and validity of conclusions. Emphasis will be placed on communication between dental investigators and practitioners. (1 cr; 10 lect hrs) Bandt and staff
- 177 (also PubH 77). **Community Communication.** The art of communication and its relationship to the practice of dentistry will be discussed. Through observation and participation the student will be shown the various mechanisms of disseminating information on dental health. Special emphasis will be placed

## School of Dentistry

---

on health education methods that can be applied to specific socioeconomic groups. Field participation will be required of all students. (2 cr; 20 lect hrs) Meskin and staff

- 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) Brand

### Division of Prosthodontics

#### *Professor*

A. Theodore Morstad, D.D.S., M.S.,  
chairman  
Ambert B. Hall, D.D.S.  
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 G. Goodkind, D.D.S., M.S.D.

#### *Clinical Assistant Professor*

David G. Anderson, D.D.S.  
Donald W. Butts, D.D.S.  
Donald O. Erickson, D.D.S.  
John F. Erickson, D.D.S.  
Carlin K. Hayes, D.D.S., M.S.D.  
Edward H. Lechner, D.D.S.  
Imants R. Niels, D.D.S.  
Walter S. Warpeha, D.D.S.

#### *Clinical Instructor*

Leonard H. Arndt, D.D.S.  
George J. Hayano, D.D.S.  
Jerome H. Kleven, D.D.S.  
Glen A. Matson, 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, Hall, and staff
- 70. Dental Prosthetics.** A lecture series presents an introduction to designing of partial dentures by co-ordinating the laboratory instruction with the knowledge the student is acquiring in the basic science courses. (1 cr; 10 lect hrs) Morstad 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 staff
- 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 bio-mechanical 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. (2-2-2 cr; 180 clin and lab hrs) Morstad 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 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 and staff
- 128. Seminar: Restorative Dentistry.** Correlated series of lectures on the clinical approach to crown and bridge, operative, and removable prosthetic dentistry which overlap in technical procedures and biological concepts. (1 cr; 10 lect hrs) Morstad, Jensen, Yock

### Nondivisional Courses

*Professor*

Mellor R. Holland, D.D.S., M.S.D.  
James R. Jensen, D.D.S., M.S.D.  
George M. Yamane, D.D.S., Ph.D.

*Associate Professor*

Anna T. Hampel, D.D.S.

*Professorial Lecturer*

Ainsley T. Thorson, D.D.S.

There are many faculty members from the basic science departments and clinical divisions contributing to the following courses.

- 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, faculty members from the Divisions of 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, faculty members from the Divisions of Crown and Bridge, Operative Dentistry, Oral Anatomy, and Prosthodontics
- 65. Orientation to Oral Health Science.** Series of lectures and clinic demonstrations by representatives of the different disciplines of the School of Dentistry, designed to 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. In the clinic, the student will observe the relation of his course work in the basic sciences and dental subjects to dental practice. (No cr; 40 lect and clin hrs) Yamane and many faculty contributing
- 72. Introduction to Occlusion.** Principles of occlusion with consideration of the neuromuscular mechanism, jaw function, and articulation. (2 cr; 10 lect hrs and 20 lab and clin hrs) Faculty members from the several disciplines in the school concerned with the principles and biodynamics of occlusion
- 149. First Aid.** The place of the dentist 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

## ***School of Dentistry***

---

- the airway, burns, fractures, wounds and sanitation, and radiation aspects of mass casualty situations. (1 cr; 10 lect hrs) Jensen and staff
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 a 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) Basic science and clinical faculty members
196. **Practice Management.** Establishing a practice, office location, arrangement, equipment, and personnel; dentist-patient relationships, records, fees, credit, and collections; office accounting, professional insurance, investments, and taxes; purchasing supplies. (1 cr) Thorson
197. **Professional Orientation.** General history of dentistry, dental education, and the University of Minnesota School of Dentistry; growth and importance of dental societies and organizations; significant social, economic, and health legislation; considerations of certain aspects of private, general, and specialty practice; ethics of dental practice; social, community, and professional obligations of the dentist. (1 cr) Holland and guest lecturers

### **Nondivisional Activities and Programs**

#### **Cleft Palate—Maxillofacial Clinic**

Ralph B. Kersten, D.D.S., Co-ordinator and Clinical Assistant Professor

#### **Comprehensive Oral Care in Pediatric Dentistry**

Thomas M. Speidel, D.D.S., Director and Instructor

#### **Electronmicroscopy**

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

#### **Hospital Dentistry Program**

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

#### **Maxillofacial Prosthetics**

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

### **CONTRIBUTING DEPARTMENTS**

#### **Anatomy**

##### *Professor*

Arnold Lazarow, M.D., Ph.D., chairman  
Anna-Mary Carpenter, Ph.D., M.D.  
William J. L. Felts, Ph.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.  
Morris Smithberg, Ph.D.  
Richard L. Wood, Ph.D.

##### *Assistant Professor*

G. Eric Bauer, Ph.D.  
Arnold W. Lindall, M.D., Ph.D.  
Leonard R. Murrell, Ph.D.

##### *Lecturer*

Robert J. Isaacson, D.D.S., M.S.D., Ph.D.  
Richard E. Stallard, D.D.S., M.S.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)
- 108. Gross Human Anatomy for Dental Students.** Lectures and dissection of extremities, abdomen, and pelvis. (6 cr; 120 hrs) Felts and staff
- 109. Gross Human Anatomy for Dental Students.** Lectures and dissection of thorax, head, and neck. (6 cr; 120 hrs) Felts 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; 40 hrs; prereq 105 or #)

### Biochemistry

*Professor*

Wallace D. Armstrong, Ph.D., M.D.,  
chairman  
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.

*Associate Professor*

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

- 104. Medical Biochemistry for Dental Students.** (5 cr; 50 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, Koerner
- 105. Medical Biochemistry for Dental Students.** (7 cr; 110 hrs) Singer, Koerner

### Microbiology

*Professor*

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

Brooks D. Church, Ph.D.  
Martin Dworkin, Ph.D.  
Gerald 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.  
Peter G. W. Plagemann, Ph.D.  
James T. Prince, M.S.

*Lecturer*

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

*Associate Professor*

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

- 100. Microbiology for Dental Students.** Morphology; methods of staining; culture media; methods of identification; principles of sterilization and disinfection;

## School of Dentistry

---

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; 90 hrs; microscope required...use of microscope may be obtained by purchasing \$3 microscope card from bursar) Anderson and staff

### Pathology

#### *Professor*

James R. Dawson, Jr., M.D., chairman  
Franz Halberg, M.D. (Experimental Pathology)  
Robert Hebbel, M.D., Ph.D.

#### *Associate Professor*

John I. Coe, M.D.  
Paul H. Lober, M.D., Ph.D.  
Lee W. Wattenberg, M.D.

#### *Assistant Professor*

Kenneth A. Osterberg, M.D.  
Walter J. Runge, M.D. (Experimental Pathology)

#### *Instructor*

David R. Duffell, M.D.  
William A. Foley, M.D.  
Donald F. Gleason, M.D.  
Erhard Haus, M.D.  
Robert E. Rydell, M.D.  
Wayne H. Schrader, M.D.  
Robert Strom, M.D.  
Earl Trucker, 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; 130 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., chairman  
Raymond N. Bieter, M.D., Ph.D.  
Edward J. Cafruny, M.D., Ph.D.  
Gordon T. Heistad, Ph.D.  
Norman O. Holte, D.D.S., M.S.D.  
Gilbert J. Mannering, Ph.D.  
Amedeo S. Marrazzi, M.D.  
Wallace F. White, Ph.D.

#### *Associate Professor*

Frank T. Maher, M.D., Ph.D.  
Jack W. Miller, Ph.D.  
Akira E. Takemori, Ph.D.

#### *Assistant Professor*

Nelson D. Goldberg, Ph.D.  
Bernard L. Mirkin, M.D., Ph.D.  
Travis I. Thompson, Ph.D.  
Ben G. Zimmerman, Ph.D.

#### *Instructor*

Faruk S. Abuzzahab, M.D.  
Harvey J. Kupferberg, Ph.D.

- 101.† **Introduction to Pharmacology.** Lectures and laboratory exercises on the action and fate of drugs. Limited to students of dentistry and pharmacy. (1 cr) Zimmerman, Kupferberg, and staff
- 102.† **General Pharmacology.** Lectures and laboratory exercises on the action and fate of drugs. Limited to students of dentistry and pharmacy. (6 cr) Zimmerman, Kupferberg, and staff
108. **Dental Therapeutics.** (1 cr; prereq 101, 102) Holte and staff

---

**Physiology**

*Professor*

Maurice B. Visscher, M.D., Ph.D.,  
chairman  
Charles Edwards, Ph.D.  
Eugene D. Grim, 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.

*Associate Professor*

Marvin Bacaner, M.D.  
H. Meade Cavert, M.D., Ph.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 L. Purple, Ph.D.

*Lecturer*

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; 120 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 medical 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 type of program, the major is in a basic medical science and the minor is in a special area of dentistry. The Ph.D. can be earned in postsophomore and postdoctoral programs which are 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.

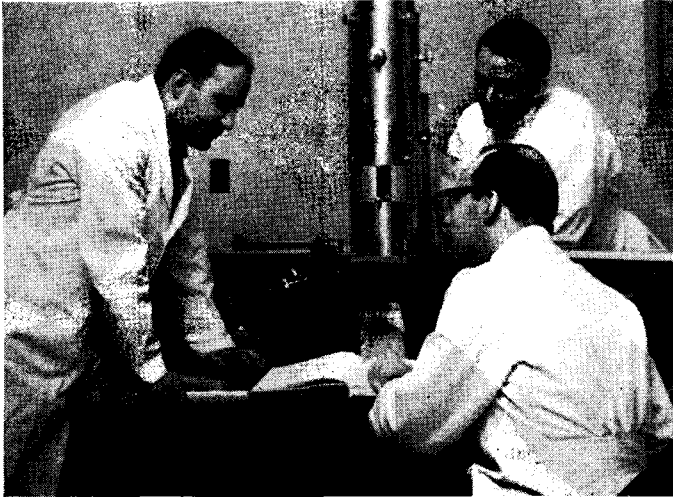


## *Graduate Education*

In these programs the student selects a major field of study in one of the basic medical sciences. Work 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 medical 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 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 is completed at the end of a minimum of 3 additional years. A stipend of \$2,200 per year is available for the first 3 years. Stipends ranging from \$6,000 to \$6,500 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 science departments and the minor is in dentistry as described above. Stipends ranging from \$5,000 to \$6,500 per year plus dependency allowances are available and tuition is paid in this program.



*Students in Combined D.D.S.-Ph.D. Program Receiving Instruction in Electronmicroscopy*

## *School of Dentistry*

---

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 per cent 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 at least 8 weeks before graduation. (Students should consult the Graduate School office for dates when their theses must be registered.) 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.

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 catalogued 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 shall present his program and his thesis title and plan not later than the opening of the quarter preceding the final quarter or final summer term, 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.

## School of Dentistry

---

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 the acceptance of the thesis. 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.** Survey of the basic principles of oral examinations, differential clinical diagnostic techniques, and treatment planning. Topics dealing with oral manifestations of systematic disease and systematic manifestations of oral disease are assigned for collateral reading. (Cr and hrs ar) Yamane
- 231f,w,s,su. Advanced Clinical Oral Diagnosis.** Practical work in the clinic; taking and recording case histories, making oral examinations, and setting up a detailed treatment plan. (Cr and hrs ar) Yamane
- 232f,w,s,su. Research Problems in Oral Medicine.** (Cr and hrs ar) Yamane
- 261f,w,s,su. Advanced Dental Roentgenology.** Systematic consideration of the basic factors governing X-radiation, emphasizing recent advances in biophysics with special reference to the technique and material used. Demonstration and practice. (Cr and hrs ar) Petersen, Yamane

**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 some further requirements. (4 cr) 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) Gorlin, Vickers
- 265f,w,s,su. Seminar: Histopathology Slides.** (1 cr) Vickers
- 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. (1-3 cr; limited to 8 students) Vickers, Gorlin
- 267f,w,s. Seminar: Human Genetics.** (1 cr) Gorlin
- 268f,w,s. Current Literature Review.** (1 cr) 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) Clark and staff

## ***School of Dentistry***

---

- 251f,w,s,su. **Seminar: Oral Surgery.** (1 cr) Clark and staff  
252f,w,s,su. **Research in Oral Surgery.** (Cr and hrs ar) Clark and staff  
253f,w,s,su. **Problems in Oral Surgery.** (Cr and hrs ar) Clark and 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

### **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) Stallard, LaBelle, and staff  
281f,w,s. **Advanced Periodontics Lectures.** Consideration of the tissues involved in periodontal disease, and the etiology and treatment of periodontal disease. (3 cr) Stallard, LaBelle  
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) Stallard  
283f,w,s. **Seminar: Periodontics.** Etiology of periodontal disease, histopathology of periodontal symptoms, treatment of periodontal disease, research in periodontics. (12 cr) Staff  
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) Stallard  
285w,s. **Histochemistry of the Normal and Pathologic Periodontium.** (2 cr) Stallard  
286su. **Bacteriology of Periodontal Diseases.** (2 cr) Korn

### **Restorative Dentistry**

- 220f,w,s,su. Advanced Oral Anatomy.** Under supervision, student assists in teaching and participates in activities of the Division of Dental Anatomy. He also is assigned special problems. (Cr and hrs ar) Hall
- 240f,w,s,su. Advanced Technical Restorative Dentistry.** Teaching experience is integrated with technical solution of problems involving application of theories of indeterminate stresses to more complex problems of tooth morphology. (Cr and hrs ar) Jensen, Wittich, 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, Wittich, Yock, Morstad
- 245f,w,s. Seminar: Prosthodontics.** Current concepts and practices related to treatment of the partially edentulous patient. (Cr and hrs ar; prereq #) Morstad, Olsen, and staff
- 246f,w,s. Seminar: Prosthodontics.** Consideration of the tissues involved and treatment of the completely edentulous patient. (Cr and hrs ar; prereq #) Morstad, Olsen, and staff
- 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, Wittich, Yock, Morstad
- 248f,w,s. Advanced Prosthodontics.** Treatment planning and clinical practice for the partially edentulous patient. (Cr and hrs ar; prereq 245, #) Morstad, Olsen, and staff
- 249f,w,s. Advanced Prosthodontics.** Treatment planning and clinical practice for the completely edentulous patient. (Cr and hrs ar; prereq 246, #) Morstad, Olsen, and staff

# PROGRAM IN DENTAL HYGIENE

## GENERAL INFORMATION

The Program in Dental Hygiene was established at the University of Minnesota in 1920. 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 personnel in the public schools, health departments, hospitals, industrial institutions, and dental offices to do dental prophylactic work and to teach hygiene of the mouth as well as dental health education. This type of preventive work is recognized as being one of the great physical needs of our modern times. A scientific training and cultural background, as thorough as possible in the 2-year program, are aimed to give the student a professional education and point of view to work in the semi-independent capacity the nature of her work demands. The program also includes training in dental assisting and laboratory work, and should make 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 incorporation of this work 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 instructions under the best auspices.

The first year's work 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 mouth 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 per cent 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 present at least a C average or better to be considered. High school records must be presented with college transfer. A minimum of 15 credits is required each quarter for the 2-year residence in the course.

### Arts and Dental Hygiene

A program leading to the degrees of graduate dental hygienist and bachelor of arts may be arranged by consulting 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 the quarter. 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) .....	27.00
(For privileges such as the Coffman Memorial Union, the Health Service, and the Minnesota <i>Daily</i> .)	
Graduation fee .....	10.00

## School of Dentistry

### 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.

### TWO-YEAR PROGRAM IN DENTAL HYGIENE

	Fall Qtr		Winter Qtr		Spring Qtr		Total	
	Cr	Hrs	Cr	Hrs	Cr	Hrs	Cr	Hrs
<b>First Year</b>								
Anat 3—Elementary Anatomy .....	4	55					4	55
MicB—Elementary Microbiology .....			4	66			4	66
Engl 1-2-3—Freshman Composition ...	4	44	4	44	4	44	12	132
DH 7-8-9—Dental Anatomy .....	2	44	2	44	2	44	6	132
DH 21-22—Dental Prophylaxis .....			2	44	2	66	4	110
MdBc 30—Biochemistry .....	4	44					4	44
Phsl 2—Human Physiology .....			4	55			4	55
Physical education .....	1½	33			1	22	2½	55
PubH 3—Personal Health .....	2	22					2	22
Biol 1-2—General Biology .....			5	99	5	99	10	198
DH 62—Dental Roentgenology Lecture ..					1	11	1	11
	17½	242	21	352	15	297	53½	891
<b>Second Year</b>								
DH 40-41-42—Dental Health Education	2	55	2	55	2	55	6	165
DH 45-46-47—Assisting in Dentistry ...	2	66	2	66	2	66	6	198
DH 53-54-55—Dental Prophylaxis .....	2	66	2	66	2	66	6	198
DH 56—General Pathology .....	1	11					1	11
DH 57-58-59—Prosthetic Dentistry and Laboratory .....	2	44	2	44	2	44	6	132
DH 60—Oral Pathology and Histology .....			2	22			2	22
GC 2C—Psychology of Human Development .....	3	33					3	33
PubH 51—Community Hygiene .....			3	33			3	33
PubH 95—Principles of Nutrition .....	3	33					3	33
Soc 1—Introduction to Sociology .....					3	33	3	33
Spch 5—Fundamentals of Speech .....	5	55					5	55
Phcl 1—Dental Therapeutics .....			2	33			2	33
DH 35—Dental Office Emergencies .....			1	11			1	11
DH 64—Lectures in Periodontology .....			1	11			1	11
DH 63—Dental Roentgenology Laboratory .....					1	22	1	22
	20	363	17	341	12	286	49	990

## 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 \$100. 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 dental 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 per cent 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.

## DESCRIPTION OF COURSES

### Dental Hygiene (DH)

*Associate Professor*

Ione M. Jackson, G.D.H., B.A., director

*Clinical Instructor*

Elizabeth M. Schendel, G.D.H., B.S.

*Instructor*

Patricia P. Sander, G.D.H., B.A.

**7-8-9. 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. (2 cr per qtr; 1 lect hr and 3 lab hrs per wk for 3 qtrs) Hall 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

## School of Dentistry

- patients. Work is introduced by practice on manikins followed by practice on patients in the dental clinic. (2 cr per qtr; 1 lect hr, 3 lab hrs, and 6 clin hrs per wk per qtr) Jackson, Schendel, Sander
35. **Dental Office Emergencies.** Consideration of first aid principles and their application to emergencies in a dental office situation. (1 cr per qtr; 1 lect hr per wk) 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; 1 lect per wk, 6 field visits, project laboratories each qtr for 3 qtrs) Schendel
- 45-46-47. **Assisting in Dentistry.** Lectures, demonstrations, and practical experience in surgical and dental assisting in operative dentistry, pedodontics, orthodontics, endodontics, periodontics, dental prosthetics, crown and bridge work, X-ray, and patient admissions. (2 cr per qtr; 6 hrs per wk for 3 qtrs) 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; 6 hrs per wk for 3 qtrs) Jackson, Schendel, Sander
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; prereq 9; 1 lect per wk for 3 qtrs, 132 lab hrs) Hall and 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 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 6 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; 1 lect hr per wk) Petersen
63. **Dental Roentgenology.** 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; 2 lab hrs per wk) Petersen
64. **Lecture 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; 1 lect hr per wk) Stallard and staff

### **Anatomy (Anat)**

3. **Elementary Anatomy.** Human gross anatomy including a brief introduction to histology, followed by a more detailed study of the head and neck with special emphasis on the teeth and their investing structures. Lectures, laboratory studies, and demonstrations. (4 cr; 3 lect hrs and 2 lab hrs per wk) 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; 4 lect hrs per wk) 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; 3 lect hrs and 6 lab hrs per wk for 2 qtrs) Staff

### **English (Engl)**

- 1-2-3. **Freshman Composition.** Nine themes of exposition a quarter; analysis of readings; training in use of library; selection and use of source materials. One novel and three or four short stories first quarter; three plays and some essays in the second; and a selection of poetry in the third. Lectures, class discussions, recordings, forums, and dramatizations of some plays. (4 cr per qtr; 4 hrs per wk for 3 qtrs) Staff

### **Microbiology (MicB)**

1. **Elementary Microbiology.** Principles of bacteriology; general survey of pathogenic bacteria, molds, protozoa, and viruses; elements of immunity; sanitary analysis of water and milk; germicides; bacterial food poisoning. (4 cr; 3 lect and lab hrs per wk for 1 qtr) Staff

### **Pharmacology (Phcl)**

1. **Dental Therapeutics.** Lecture and laboratory study of drugs relating to the application in dental therapeutics. (2 cr; 1 lect hr and 10 lab hrs per wk for 1 qtr) Holte and staff

### **Physical Education (PEW)**

Instruction is given in a wide variety of seasonal sports, dance, aquatics, and body conditioning activities. The basis of selection is determined by the "Activity

## **School of Dentistry**

---

Rating" given by the Health Service and also by the interest of the student. Courses meeting 2 days a week carry 1 credit while those meeting 3 days a week carry 1½ credits. The Program in Dental Hygiene requires posture and one sport activity. 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; prereq 1 qtr zoology or biology, 1 qtr chemistry; 3 lect hrs and 2 dem hrs per wk) 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; 3 lect hrs per wk for 2 qtrs) 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; 3 lect hrs per wk for 1 qtr) Staff

### **Public Health (PubH)**

- 3. Personal Health.** Normal body function; causes and prevention of disease. (2 cr; not open to students who have taken GC 10C) Thomson
- 51. Community Hygiene.** Elementary concepts of development, spread, and prevention of preventable diseases, community programs for their control. (3 cr; not open to students who have taken 4, 50, 52, or 100; prereq 3, or GC 10C) Schuman
- 95. Human Nutrition.** Particular reference to public health. Nutritional values of foods, food utilization and requirements, food management, nutrition education. (3 cr; prereq courses in chemistry and biology or consent of instructor) J Anderson

### **Sociology (Soc)**

- 1. Introduction: Man in 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; 3 lect hrs per wk) Martindale

# 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 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 your local high school 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 1 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 \$175 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.

## COURSE OF STUDY

	Cr	Hrs
<b>DENTAL ASSISTING CLASSES</b>		
DA 1A—Clinic Orientation .....	2	30
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 .....	5	160
DA 8—Dental Therapeutics .....	1	10
DA 9—Dental X-Ray .....	1	10
DA 10—Practice Management .....	1	10
DA 11—Clinic III .....	7	210
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	44
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
	60	1084

## DESCRIPTION OF COURSES

### Dental Assisting (DA)

*Assistant Professor*

Helen M. Tuchner, B.A., director

*Professorial Lecturer*

Ainsley T. Thorson, D.D.S.

- 1A. **Orientation to Clinical Procedures.** Use of dental materials, instruments and equipment. Basic study of dental services rendered in clinical situations. (2 cr; lect and lab) Tuchner and staff
1. **Oral Anatomy and Laboratory Procedures.** 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; 1 lect and 1 lab per wk) 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) Thorson
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) Tuchner and staff
4. **Microbiology.** Morphology, cultural characteristics, and laboratory differentiation of oral bacteria and viruses. Types and uses of disinfecting agents, methods of sterilization. (1 cr) Thorson
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) Thorson



## *School of Dentistry*

---

6. **Prosthetic Laboratory.** Properties and uses of impression materials. Basic prosthetic techniques. (2 cr) Staff
7. **Clinic II.** Clinical assignments—follows DA 3. (5 cr) Tuchner and staff
8. **Dental Therapeutics for Dental Assistants and Hygienists.** Lecture and laboratory study of drugs relating to their application in dental therapeutics. (2 cr; 1 lect hr per wk, 10 hrs dem) 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) Petersen
10. **Office Management.** Reception of patients, use of the telephone, arranging appointments, keeping office records, fees and collections, purchasing supplies. (1 cr) Thorson
11. **Clinic III.** Clinical assignments—follows DA 7. (5 cr) 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) Staff ar
14. **Seminar: Dental Assisting.** Series of lectures to follow in sequence DA 12. (1 cr) Staff ar

### **General College (GC)**

- 2C. **Psychology of Human Development.** A study of human behavior in terms of its origins and unfolding, and an introduction to the methods and techniques applicable to the scientific study of growth and development. The course is 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)
- 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)
- 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 over-all functioning of the body, what can go wrong with it, and summarizes what is known about keeping it on the job. (5 cr)
- 16A. **Accounting Fundamentals.** In this introduction to accounting principles, the student works on the recording of business transactions, special journals, 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)

- 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)
- 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; 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; 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)

## INDEX

	Page		Page
Accreditation .....	3	Awards .....	45
Admission Requirements		Curriculum .....	44
Dental Assisting .....	50	Description of Courses .....	45
Dental Hygiene .....	42	Fees .....	43
Dentistry .....	3	General Information .....	42
Graduate Education .....	34, 36	Dentistry Program for D.D.S. Degree	
Advanced Standing in Dentistry .....	13	Admission Requirements .....	3
Bachelor of Science in Dentistry .....	12	Application Procedure .....	6
Basic Sciences in Dentistry Program		Curriculum .....	18
Anatomy .....	30	Dental Aptitude Test .....	5
Biochemistry .....	31	Equipment and Books .....	8
Microbiology .....	31	Fees .....	7
Pathology .....	32	Financial Aids .....	8
Pharmacology .....	32	Personal Interview .....	6
Physiology .....	33	Requirements for Graduation .....	14
Clinical and Applied Courses in		Student Affairs .....	11
Dentistry		Fees	
Crown and Bridge .....	20	Dental Assisting .....	50
Genetics .....	21	Dental Hygiene .....	43
Non-divisional Courses .....	29	Dentistry .....	7
Operative and Endodontics .....	21	Graduate Education .....	34
Oral Anatomy and Histology .....	22	Financial Aids .....	8
Oral Diagnosis .....	23	Graduate Education	
Oral Pathology .....	23	Doctor of Philosophy Program .....	34
Oral Surgery .....	24	Fees .....	34
Orthodontics .....	25	General Information .....	34
Pedodontics .....	25	Master of Science in Dentistry	
Periodontics .....	26	Program .....	36
Preventive Dentistry .....	27	Areas of Study in M.S.D. Program	
Prosthodontics .....	28	Oral Medicine .....	39
Combined Program in Arts and Den-		Oral Pathology .....	39
tistry .....	13	Oral Surgery .....	40
Continuation Study Program .....	17	Orthodontics .....	40
Dental Assisting Program		Periodontics .....	40
Admission Requirements .....	50	Restorative Dentistry .....	41
Course of Study .....	51	Health Service .....	16
Description of Courses .....	51	Housing Facilities .....	14
Fees .....	50	Libraries .....	16
General Information .....	50	Omicron Kappa Upsilon .....	11
Dental Hygiene Program		Sigma Phi Alpha .....	45
Admission Requirements .....	42	Teaching, Research, and Service Ob-	
Advanced Standing .....	43	jectives .....	1
Application Procedure .....	43		
Arts and Dental Hygiene .....	43		

## UNIVERSITY OF MINNESOTA HEALTH SCIENCE 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. Bio-Medical Library
11. Men's Dormitories
12. Pioneer Hall for Men and Women

