THE HIPPOCRATIC OATH
FORMULATED AT GENEVA

Now being admitted to the profession of medicine I solemnly pledge to consecrate my life to the service of humanity. I will give respect and gratitude to my deserving teachers. I will practice medicine with conscience and dignity. The health and life of my patient will be my first consideration. I will hold in confidence all that my patient confides in me. I will maintain the honor and the noble traditions of the medical profession. My colleagues will be as my brothers. I will not permit considerations of race, religion, nationality, party politics or social standing to intervene between my duty and my patient. I will maintain the utmost respect for human life from the time of its conception. Even under threat I will not use my knowledge contrary to the laws of humanity. These promises I make freely and upon my honor.

*Adopted by the Second General Assembly of the World Medical Association held in Geneva, Switzerland, September 8 to 11, 1948
college of medicine
1971–1972
course offerings
COLLEGE OF MEDICINE CALENDAR

ACADEMIC YEAR 1971-72

Quarters
July 6 through September 26, 1971 ........ Summer
September 27 through December 19, 1971 .......... Fall
January 3 through March 26, 1972 ........ Winter
March 27 through June 24, 1972—
Freshmen & Sophomores ........ Spring
April 3 through June 24, 1972—
Juniors .................................. Spring
April 3 through May 28, 1972—
Seniors .................................. Spring

Recesses and Holidays
July 5, 1971 (Monday) ....................... Independence Day
September 6, 1971 (Monday) ............... Labor Day
November 25, 1971 (Thursday) ............ Thanksgiving
Noon, December 18, 1971 through January 2, 1972 .......... Winter Recess
Noon, April 1 through April 9, 1972—
Freshmen & Sophomores ........ Spring Recess
Noon, March 25 through April 2, 1972—
Juniors & Seniors ................ Spring Recess
May 26, 1972 (Monday) ................... Memorial Day

Special Events
September 15, 1971 (Wednesday) .......... Field Day (Juniors)
October 31, 1971 (Sunday) ................ Family Day
April 22, 1972 (Saturday) ................ Health Professions Day
April 11 and 12, 1972 ....................... National Board Examination, Part II
June 13 and 14, 1972 & September 6 and 7, 1972 National Board Examination, Part I
June 4, 1972 (Sunday) ...................... Commencement

Freshmen and Sophomores
September 23, 1971 (Thursday) .......... Freshman orientation, a.m.
September 23, 1971 (Thursday) .......... Freshman physical examination, p.m.
September 23, 1971 (Thursday) .......... Sophomore registration, p.m.
first half tuition due
September 24, 1971 (Friday) ............. Freshman registration, a.m.
first half tuition due
September 27, 1971 (Monday) .......... First day of classes
January 31, 1972 (Monday) ............... Balance of tuition due
Juniors and Seniors

July 6, 1971 (Tuesday) ........................................ First half tuition due

July 6 through August 1, 1971 ......................... Period IA

August 2 through August 29, 1971 .................. Period IB

August 30 through September 26, 1971 .......... Period IIA

September 27 through October 24, 1971 .... Period IIB

October 25 through November 21, 1971 .... Period IIIA

November 22 through December 19, 1971 .... Period IIIB

January 3, 1972 through
January 30, 1972 ........................................... Period IVA

January 31, 1972 (Monday) ......................... Balance of tuition due

January 31 through February 27, 1972 .......... Period IVB

February 28 through March 26, 1972 .......... Period VA

April 3 through April 30, 1972 ....................... Period VB

May 1 through May 28, 1972 .......................... Period VIA

May 29 through June 24, 1972
(Juniors only) ................................................ Period VIB
New University Hospital contains 265 teaching beds at the Medical Center. The old hospital units have been completely renovated and are utilized for patient care and administrative function.

Basic Science Building and Library of Medicine.
ADMINISTRATION

The Board of Regents

Kermit Hansen, Omaha ................................................................. January 1973
Edward Schwartzkopf, Lincoln ....................................................... January 1973
J. G. Elliott, Scottsbluff ................................................................. January 1975
Robert L. Raun, Minden ................................................................. January 1975
Robert R. Koefoot, M.D., Grand Island ........................................... January 1977
James H. Moylan, Omaha ............................................................... January 1977
Robert J. Prokop, M.D., Wilber ..................................................... January 1977
Kermit Wagner, Schuyler ............................................................... January 1977

G. Robert Ross, Lincoln, Corporation Secretary

Term Expires

University-Wide

D. B. Varner, M.S., Chancellor
Merk Hobson, Ph.D., Executive Vice Chancellor
Howard R. Neville, Ph.D., Vice Chancellor for Business and Finance
G. Robert Ross, Ph.D., Vice Chancellor
Norman H. Cromwell, Ph.D., Executive Dean for Graduate Studies and Research
Francis L. Schmehl, S.D., Research Administrator
Harry S. Allen, M.S., Director of Institutional Research and Planning
Gene A. Budig, Ed.D., Assistant Vice Chancellor and Assistant Corporation Secretary
George S. Round, B.S., Director of University Relations and Special Assistant to the Chancellor
Glenn W. Smith, M.A., Director of Budget and Systems Planning

Medical Center

Cecil Legriel Wittson, M.D., President of the University Medical Center
Robert B. Kugel, M.D., Dean of the College of Medicine
Rena E. Boyle, Ph.D., Dean of the School of Nursing
Jane Carney, M.A., Associate Dean of the School of Nursing
Michael J. Carver, Ph.D., Assistant Dean of the College of Medicine
Mary Jo Henn, M.D., Assistant Dean of the College of Medicine
Paul E. Hodgson, M.D., Assistant Dean for Curriculum
Lois Merrill, M.S., Associate Dean of the School of Nursing
Robert H. Messer, M.D., Assistant Dean for Graduate Study
Warren H. Pearse, M.D., Assistant Dean of the College of Medicine
Richard Schripsema, M.H.A., Director of Business and Finance, Medical Center, and Hospital Administrator
Terry Barton, B.A., Director of Medical Center Public Information
Pete Boughn, B.A., Administrative Assistant to the President of the Medical Center
Jesse C. Edwards, M.S., Assistant to the Dean of the College of Medicine
Emerti Faculty

Chauncey Leroy Anderson, B.S., M.D., Clinical Associate in Family Practice, Emeritus

Meyer Beber, B.S., Ph.D., M.D., Professor of Internal Medicine and Associate Professor of Biochemistry, Emeritus

Paul M. Bancroft, B.S., M.S., M.D., Clinical Associate Professor of Pediatrics, Emeritus

Clarence F. Bantin, B.S., M.D., Associate in Pediatrics, Emeritus

James Winfred Benjamin, B.A., M.A., Ph.D., Professor of Anatomy, Emeritus

Rolland Russell Best, B.S., M.D., Professor of Surgery, Emeritus

John Francis Bresnahan, B.S., M.S., M.D., Instructor in Internal Medicine, Emeritus

H. H. Brinkman, B.S., M.D., Clinical Assistant in Surgery, Emeritus

Olin James Cameron, M.S., M.D., Professor of Dermatology, Emeritus

Herbert Leroy Davis, A.B., M.D., Professor of Surgery, Emeritus

Herbert Leroy Davis, Jr., A.B., Ph.D., Research Associate Professor of Biochemistry and Surgery, Emeritus

Frank Lowell Dunn, B.S., M.S., M.D., Professor of Internal Medicine, Emeritus

H. Chandler Elliott, B.A., M.A., Ph.D., Professor of Anatomy and Professor of Neurology and Psychiatry, Emeritus

Horace K. Gilson, B.A., M.D., Assistant Professor of Pathology, Emeritus

Walter Mark Gysin, M.D., Associate Professor of Neurology and Psychiatry, Emeritus

Fred L. Humoller, B.S., Ph.D., Associate Professor of Pharmacology, Emeritus

Arthur Letcher Irons, M.D., Associate in Surgery, Emeritus

J. Hewitt Judd, B.S., M.D., Professor of Ophthalmology, Emeritus

Esley Joseph Kirk, A.B., M.D., Associate Professor of Internal Medicine, Emeritus

John Stephens Latta, A.B., Ph.D., Professor of Anatomy, Emeritus

Joseph Daniel McCarthy, M.D., Professor of Internal Medicine, Emeritus

A. Ross McIntyre, B.S., Ph.D., M.D., Professor of Pharmacology, Emeritus

Sergius Morgulis, A.B., M.A., Ph.D., Professor of Biochemistry, Emeritus

Charles A. Owens, B.S., M.D., Associate Professor of Urology, Emeritus

Carl John Pothoff, B.S., M.S., M.D., Professor of Preventive Medicine and Public Health, Emeritus

John Philbrook Redgwick, B.S., M.D., Professor of Obstetrics and Gynecology, Emeritus

Helen Wyandt Reihart, B.S., M.S., Research Associate in Psychiatry, Emeritus

George Edwin Robertson, B.S., M.D., Professor of Pediatrics, Emeritus

William L. Shearer, B.S., D.D.S., Professor of Surgery, Emeritus

Chester Hill Waters, Sr., B.S., M.D., Professor of Surgery, Emeritus

Senior Consultants

Leland Clayton Albertson, A.B., M.D., Instructor in Internal Medicine, Senior Consultant

Allen Byford Anderson, M.D., Clinical Associate in Family Practice, Senior Consultant

Arthur Wesley Anderson, Sr., B.A., M.D., Clinical Associate in Family Practice, Senior Consultant

Harley E. Anderson, B.S., M.D., Associate Professor of Obstetrics and Gynecology, Senior Consultant

Walter Benhack, B.A., M.D., Clinical Associate in Family Practice, Senior Consultant

Paul Gordon Bunker, B.S., M.D., Participating Consultant in Otorhinolaryngology, Senior Consultant

Waldron Alvin Cassidy, A.B., M.D., Professor of Otorhinolaryngology, Senior Consultant

J. Calvin Davis, Jr., A.B., M.D., Professor of Otorhinolaryngology, Senior Consultant

Max Fleishman, M.D., Assistant Professor of Internal Medicine, Senior Consultant

Miles E. Foster, A.B., B.S., M.D., Assistant Professor of Pathology, Senior Consultant

W. Max Gentry, A.B., M.D., Clinical Associate in Family Practice, Senior Consultant

Harlan S. Heim, B.A., M.D., Clinical Associate in Family Practice, Senior Consultant

George Alfred Haslam, A.B., B.S., M.D., Clinical Associate in Family Practice, Senior Consultant

Dwight Otis Hughes, B.S., M.D., Clinical Associate in Family Practice, Senior Consultant

Wayne McKinley Hull, B.A., B.S., M.S., M.D., Assistant Professor of Internal Medicine, Senior Consultant

Howard Beeman Hunt, A.B., M.A., M.D., Professor of Radiology, Senior Consultant; Professor of Physical Medicine and Rehabilitation, Senior Consultant

J. Jay Keegan, A.B., A.M., M.D., Professor of Surgery, Senior Consultant
Faculty

Earl F. Leininger, B.S., M.D., Clinical Associate in Family Practice, Senior Consultant
Ralph H. Luikart, M.D., Professor of Obstetrics and Gynecology, Senior Consultant
Morris Margolin, A.B., M.D., Assistant Professor of Internal Medicine, Senior Consultant
James Sylvester McAvin, Ph.G., M.D., Associate in Radiology, Senior Consultant
Leon Steiner McGoogan, A.B., M.D., Professor of Obstetrics and Gynecology, Senior Consultant
Aaron Manasses McMillan, A.B., M.D., Clinical Associate in Family Practice, Senior Consultant
Willson Bridges Moody, A.B., M.D., Professor of Internal Medicine, Senior Consultant
Harold Smith Morgan, M.D., Clinical Associate Professor of Obstetrics and Gynecology, Senior Consultant
Herschel B. Morton, B.S., M.D., Clinical Associate Professor of Surgery, Senior Consultant
Nathan Muskin, A.B., M.D., Instructor in Internal Medicine, Senior Consultant
Theodore August Peterson, B.S., M.D., Clinical Associate in Family Practice, Senior Consultant
E. Burkett Reed, B.S., M.D., Associate Professor of Internal Medicine, Senior Consultant
Sidney O. Reese, B.S., M.D., Clinical Associate Professor of Surgery, Senior Consultant
Donald Jasper Wilson, B.S., A.B., M.D., Clinical Associate Professor of Ophthalmology, Senior Consultant

Active Faculty

James Richard Adamson, B.S., M.D., Assistant Instructor in Pathology
Nathan Richard Adkins, B.S., M.D., Assistant Professor of Radiology
John A. Aita, Ph.D., M.D., Professor of Neurology, Professor of Psychiatry, Associate in Physical Medicine and Rehabilitation
George T. Alliband, B.S., M.D., Associate Professor of Ophthalmology
Evelyn Alpern, B.A., M.A., Instructor in Obstetrics and Gynecology
Rashid Abdulla Al-Rashid, B.S., M.D., Assistant Professor of Pediatrics
Jurgen F. Althoff, M.D., Assistant Professor of Pathology
R. Stephen S. Amato, B.S., M.A., Ph.D., Assistant Professor of Pediatrics, Assistant Professor of Anatomy
Lawrence Lloyd Anderson, A.B., M.D., Associate in Surgery
Robert C. Anderson, B.S., M.D., Clinical Associate in Family Practice
Thorwald Roberi Anderson, A.B., M.D., Clinical Assistant Professor of Pathology
Zola Anderson, B.A., M.A., Instructor in Pediatrics
Carol Remmer Angle, A.B., M.D., Associate Professor of Pediatrics
William Dodge Angle, B.S., M.D., Associate Professor of Internal Medicine
K. Don Arrasmith, A.B., M.D., Clinical Associate in Family Practice
Charles Ferg Ashby, A.B., B.S., M.D., Clinical Associate in Family Practice
Stanley Monrad Bach, B.A., M.D., Associate Professor of Orthopedic Surgery, Associate Professor of Anatomy, Associate in Physical Medicine and Rehabilitation
David LeRoy Bacon, B.S., M.S., M.D., Instructor in Internal Medicine
Kenneth Charles Bagby, A.B., M.D., Clinical Associate in Family Practice
Robert N. Baker, B.A., M.D., Professor of Neurology
*William H. Bancroft, B.S., M.D., Assistant Instructor in Internal Medicine
Anthony Joseph Barak, B.S., M.S., Ph.D., Associate Professor of Biochemistry
Kenneth L. Barkley, B.S., M.S., Ph.D., Research Associate Professor of Obstetrics and Gynecology, Associate Professor of Biochemistry
John Lucian Barmore, M.D., Associate Professor of Surgery
John H. Barthell, M.D., Clinical Instructor in Dermatology
George William Bartholow, B.S., M.D., Associate Professor of Psychiatry
Trueman R. Barton, B.A., Director of Public Information with rank of Assistant Instructor
Francis Frederick Bartone, A.B., M.D., Associate Professor of Urology (Chairman of Department)
David W. Bean, B.S., M.D., Assistant Professor of Psychiatry
Dennis D. Beavers, M.D., Instructor in Obstetrics and Gynecology
Melvin D. Bechetel, M.D., Clinical Associate in Family Practice
William L. Beck, M.S., M.D., Assistant Professor of Otorhinolaryngology
Philip Fred Beckenhauer, B.S., M.S., Assistant Instructor in Obstetrics and Gynecology
William F. Becker, B.S., M.D., Clinical Associate in Family Practice
Gladys M. Beddoe, B.A., M.D., Assistant Instructor in Otorhinolaryngology

* Leave of absence
Edward T. Beitenman, B.S., M.D., Assistant Professor of Psychiatry
Charles Dudley Bell, B.A., M.D., Instructor in Dermatology
Ronald Courney Bell, B.A., M.D., Clinical Associate in Family Practice
Arthur Lawrence Bennett, A.B., Ph.D., M.D., Professor of Physiology
Reba Ann Benschoter, B.A., M.S., Instructor in Psychiatry
Bradley M. Berman, B.A., M.D., Instructor in Surgery
Kenneth K. Berry, B.A., Ph.D., Assistant Professor of Psychiatry
Wesley C. Berry, Jr., M.S., D.D.S., Assistant Professor of Periodontology
William M. Berion, M.D., Professor of Pathology
Albert Seward Black, B.S., M.D., Assistant Professor of Surgery
Russell S. Blanchard, B.A., B.S., M.D., Professor of Physical Medicine and Rehabilitation (Chairman of Department)
George W. Blanton, B.S., Instructor, Division of Physical Therapy
Phyllis Ann Blease, B.S., Assistant Instructor in Pathology
Irvin LeRoy Blose, B.S., M.S., Assistant Professor of Psychiatry
Alan Jay Blochley, B.S., Instructor in Radiology
Robert Ernest Bodmer, B.A., M.D., Instructor in Radiology
William Carl Boeler, B.A., M.D., Associate in Obstetrics and Gynecology
Dana G. Bohi, B.A., M.D., Assistant Professor of Obstetrics and Gynecology
Donald Robert Bohnenkamp, Demonstrator, Physical Medicine and Rehabilitation
Richard A. Bolamperti, M.D., Assistant Professor of Radiology
Geraldine M. Bolinger, B.S., Instructor in Division of Physical Therapy
Arden H. Bonebrake, B.A., M.D., Clinical Associate in Family Practice
Warren G. Bosley, A.B., M.D., Clinical Assistant Professor of Pediatrics
Cecil R. Boughn, B.A., Administrative Assistant to the President with rank of Assistant Professor
Rena E. Boyle, B.S., M.A., Ph.D., Professor of Nursing (Dean of the School of Nursing)
Andrew Michael Bozena, B.S., M.D., Instructor in Obstetrics and Gynecology
Warren Quentin Bradley, A.B., M.D., Clinical Instructor in Radiology
Russell C. Brauer, B.A., M.D., Assistant Professor of Surgery
John Grierson Brazer, A.B., M.D., Associate Professor of Internal Medicine
Raymond John Breed, B.S., M.D., Instructor in Physical Medicine and Rehabilitation
Charles M. Bressman, A.B., M.D., Assistant Professor of Family Practice
Dale E. Brett, B.A., M.D., Instructor in Surgery
Nancy Ann Timmons Brockman, B.S., M.A., Instructor in Pediatrics, Instructor in Otorhinolaryngology
John Andrew Brown, III, B.S., M.D., Clinical Associate in Family Practice
Kenneth Murie Browne, A.B., M.D., Associate Professor of Surgery
Karl Wayne Bruce, B.S., M.S., D.D.S., Instructor in Radiology
John B. Brush, A.B., M.D., Associate Professor of Surgery
Donald John Bucholz, B.S., M.A., M.D., Assistant Professor of Internal Medicine
Warren H. Buckner, III, B.S., Assistant Instructor in Medical Technology, Allied Health
James C. Buell, M.D., Assistant Instructor in Internal Medicine
Richard Arndt Bunting, B.S., M.D., Assistant Professor of Radiology
Charles Wilhelm Burkland, A.B., B.S., M.D., Associate Professor of Surgery
Dwight Willard Burney, A.B., M.D., Associate Professor of Orthopedic Surgery
Arnold G. Burnham, B.S., M.S., Clinical Associate in Family Practice
William G. Burrows, L.M.C., M.D., Professor of Psychiatry (Associate Director Nebraska Psychiatric Institute, Vice Chairman of the Department)
David Samuel Burton, Demonstrator in Physical Medicine and Rehabilitation
Mardelle Buss, B.A., M.P.H., M.D., Assistant Professor of Pediatrics
John Byron Byrd, B.S., M.D., Clinical Associate in Family Practice
Thomas Dale Caivert, B.S., M.D., Clinical Assistant Professor of Pediatrics
Nancy Sue Johnston Camacho, B.A., M.A.L.S., Instructor in Library Science
Antonio Jose Cardesa-Garcia, M.D., Assistant Professor of Pathology
James G. Carlson, A.B., M.D., Clinical Associate in Family Practice
Oscar Carp, B.S., M.S., Associate Professor of Otorhinolaryngology
William S. Carter, B.S., M.D., Assistant Professor of Otorhinolaryngology
Ralph Lowell Cassel, A.B., M.D., Clinical Associate in Family Practice
Michael Joseph Carver, B.S., M.S., Ph.D., Professor of Biochemistry, Research Professor of Psychiatry, Assistant Dean
Ercole Cavalleri, D.S., Research Assistant Professor of Biochemistry
Ralph J. Cerny, A.B., M.H.A., Associate Hospital Administrator with rank of Assistant Professor
Charles C. Chappell, M.D., Professor of Pediatrics
George A. Charnock, H.N.C., Ph.D., Assistant Professor of Biochemistry

* On leave of absence
Sachindra Nath Chaudhuri, M.B.B.S., Ph.D., Research Assistant Professor of Internal Medicine, Research Assistant Professor of Microbiology
Henri E. Chehab, M.D., Assistant Professor of Obstetrics and Gynecology
LeGrand Dwight Cherry, B.S., M.D., Clinical Assistant Professor of Surgery
Donald L. Chilcoat, A.B., M.S., M.D., Assistant Professor of Internal Medicine
Margaret S. Choa, A.A., M.D., Assistant Instructor in Internal Medicine
Robert Morris Cochran, B.S., M.D., Assistant Professor of Anatomy and Assistant Professor of Surgery
Charles Maxwell Coe, B.S., M.D., Clinical Associate in Surgery
LeGrande Dwight Cherry, B.S., M.D., Clinical Assistant Professor of Surgery
Alan H. Cohen, B.S., M.D., Instructor in Neurology
Frank Cole, B.S., M.D., Clinical Associate in Surgery
Francis Carter Coleman, M.D., Clinical Assistant Professor of Pathology
Robert Marshall Collins, B.S., M.D., Assistant Professor of Obstetrics and Gynecology
Vicente Franklin Colon, B.A., M.D., Clinical Associate in Family Practice
Ole B. Conn, Assistant Instructor
Robert Edward Connor, B.S., M.D., Assistant Professor of Anatomy and Assistant Professor of Surgery
Charles Maxwell Coe, B.S., M.D., Clinical Associate in Family Practice
John Daniel Coe, A.B., M.D., Associate Professor of Surgery
Alan H. Cohen, B.S., M.D., Instructor in Neurology
Frank Cole, B.S., M.D., Clinical Associate in Surgery
Francis Carter Coleman, M.D., Clinical Assistant Professor of Pathology
Robert Marshall Collins, B.S., M.D., Assistant Professor of Obstetrics and Gynecology
Vicente Franklin Colon, B.A., M.D., Clinical Associate in Family Practice
Ole B. Conn, Assistant Instructor
Robert Edward Connor, B.S., M.D., Assistant Professor of Anatomy and Assistant Professor of Surgery
Evelyn E. Conrad, B.S., D.V.M., Ph.D., Associate Professor of Microbiology
(Chairman, Centralized Experimental Animal Facility)
William E. Dye, B.S., Ph.D., Associate Professor of Microbiology and Associate Professor of Internal Medicine
Donald A. Dynok, B.S., M.S., M.D., Assistant Instructor in Pathology
Frank Lewis Eagle, B.S., M.D., Associate Professor of Ophthalmology
Alvin M. Earle, B.S., M.S., Ph.D., Associate Professor of Anatomy
Louise Foster Eaton, A.B., M.D., Assistant Professor of Psychiatry and Assistant Professor of Pediatrics
Merrill T. Eaton, A.B., M.D., Professor of Psychiatry (Chairman of Department), Director Nebraska Psychiatric Institute
Michael S. Ebadi, B.A., M.S., Ph.D., Associate Professor of Pharmacology (Acting Chairman of Department), Associate Professor of Pediatrics
Dale Walter Ebers, B.S., M.D., Assistant Professor of Pediatrics
Robert Earl Ecklund, B.S., M.D., Associate Professor of Internal Medicine
Jesse C. Edwards, B. Gen.Ed., M.S., Instructor in Administrative Medicine, Administrative Associate to the Dean
Robert W. Ehrlich, A.B., M.D., M.S., Clinical Instructor in Surgery
James D. Eisen, B.S., M.S., Ph.D., Associate Professor of Human Genetics, Psychiatry, and Associate Professor of Pediatrics
Louis John Ekeler, M.D., Clinical Associate in Family Practice
William Benton Eifeldt, B.S., M.D., Clinical Associate in Family Practice
Edna Ann Elfont, B.S., M.S., Ph.D., Instructor in Anatomy
Alfred George Ellick, A.B., J.D., Associate Professor of Medical Jurisprudence (Chairman of the Department)
Robert James Ellisong, B.S., M.A., Ph.D., M.D., Professor of Medical Psychology, Psychiatry, and Professor of Neurology
Kenneth Wilson Ellis, B.S., M.D., Instructor in Orthopedic Surgery
Ron R. Ellis, B.A., M.A., Ph.D., Assistant Professor of Medical Psychology, Psychiatry
James Howard Elston, M.D., Assistant Professor of Obstetrics and Gynecology
Dennis E. Emanuel, B.A., Assistant Instructor in the Division of Physical Therapy
Stuart P. Embury, M.D., Clinical Associate in Family Practice
Charles G. Erickson, B.S., M.D., Assistant Professor of Pediatrics
Jeannele Ettinger, B.A., M.D., Assistant Professor of Psychiatry
Geraldine Eyberg, R.N., Assistant Instructor in Pediatrics
Robert Gerald Faier, B.S., M.A., M.D., Instructor in Ophthalmology
Wendell Lee Fairbanks, A.B., M.D., Clinical Associate in Family Practice
Margaret Failhe, B.A., M.A., M.D., Assistant Professor of Family Practice
Robert Feldman, B.S., Research Assistant in Pathology
Alfred E. Feleppa, B.A., Ph.D., Assistant Professor of Anatomy
Randolph M. Ferlie, B.S., M.D., Associate Professor of Surgery
Nancy Mary Fieber, B.S., Assistant Instructor in Pediatrics and Assistant Instructor in the Division of Physical Therapy
Charles A. Field, B.A., M.D., M.S., Assistant Professor of Obstetrics and Gynecology
Kenneth J. Fijan, B.S., M.D., Clinical Instructor in Pediatrics
John Clayton Filkins, B.S., M.D., Associate Professor of Ophthalmology
Paul M. Fine, M.D., Associate Professor of Psychiatry and Clinical Director of Children's Service, N.P.I.
John Charles Finegan, M.D., Clinical Associate in Family Practice
Roger Lee Fink, B.S., M.D., Instructor in Pathology
Alister Ian Finlayson, M.A., M.D., Professor of Neurological Surgery
Eugene Fisher, M.D., Instructor in Family Practice
Donald Max Fitch, A.B., B.S., M.D., Assistant Professor of Pathology
Alan J. Fix, B.A., Ph.D., Instructor in Medical Psychology, Psychiatry
Gerald J. Fleischli, B.S., M.S., M.D., Assistant Professor of Preventive Medicine and Public Health
Martin T. Fleming, B.A., M.S.S.W., Instructor in Pediatrics
Diana C. Focht, B.S., M.A., Assistant Instructor in Pediatrics
John F. Foley, B.S., M.D., Professor of Internal Medicine
Donovan B. Foote, Jr., B.S., M.D., Assistant Professor of Otorhinolaryngology
John Jay Ford, III, B.A., M.D., Clinical Associate in Family Practice
Richard O. Forsman, B.S., M.D., Clinical Associate in Family Practice
Gordon D. Francis, A.B., M.D., Clinical Associate in Family Practice
Carl Thomas Frank, B.S., M.D., Instructor in Urology
Muriel Naomi Frank, B.S., M.D., Assistant Professor of Anesthesiology
Maurice D. Frazer, B.S., M.D., Clinical Associate Professor of Radiology
Gordon Eric Fredrickson, B.S., M.D., Instructor in Dermatology
Ivan Merwyn French, A.B., M.D., Clinical Associate in Family Practice
Fred John Fricle, B.S., M.S., M.D., Associate in Physical Medicine and Rehabilitation
Walter J. Friedlander, B.A., M.D., Professor of Neurology (Chairman of the Department) and Professor of Anatomy
John A. Haggstrom, B.A., M.D., Instructor in Radiology
Charles Albert Hamilton, B.S., M.S., M.D., Ph.D., Associate Professor of Internal Medicine
Robert Hamilton, B.A., M.D., Assistant Instructor in Surgery
Richard W. Hammer, B.A., M.D., Assistant Professor of Pediatrics
Donald Lee Hammes, B.S., M.D., Assistant Professor of Internal Medicine
William R. Hamsa, Jr., B.S., M.D., Assistant Professor of Orthopedic Surgery
William R. Hamsa, Sr., B.S., M.D., Professor of Orthopedic Surgery
Louis Evenl Haniach, M.D., Instructor in Surgery
Charles Robert Hankins, A.B., M.D., Assistant Professor of Internal Medicine
Florence M. Hansen, B.A., M.S.S.A., Instructor in Preventive Medicine and Public Health
Hodson A. Hansen, B.S., M.D., Clinical Instructor in Obstetrics and Gynecology
Walter Leon Hard, A.B., Ph.D., Professor of Anatomy (Vice Chairman of Department)
Denham Harman, B.S., Ph.D., M.D., Professor of Biochemistry and Professor of Internal Medicine
Roger K. Harned, B.S., M.D., Assistant Professor of Radiology
Alfred E. Hartmann, B.S., M.D., Assistant Instructor in Pathology
Beverly J. Hartung, B.A., M.S.W., Instructor in Preventive Medicine and Public Health
Hodson A. Hansen, B.S., M.D., Clinical Instructor in Obstetrics and Gynecology
Guy T. Haven, B.S., M.D., Ph.D., Assistant Instructor in Pathology and in Biochemistry
Mary C. Haven, B.S., M.S., Instructor in Pathology
Orin Robert Hayes, B.S., M.D., Assistant Instructor in Pathology
Eleanor L. Heaston, Ph.B., M.S.S.W., Instructor in Pediatrics
William Paul Heidrick, M.D., Instructor in Obstetrics and Gynecology
Merrill Jesse Hendrickson, B.S., Ph.D., Assistant Professor of Pharmacology
Mary Josephine Henn, A.B., M.S., M.D., Professor of Internal Medicine and Assistant Dean in charge of Student Affairs
*Lois Ann Herbel, Assistant Instructor in Pathology
Ralph Kent Herrmsmeyer, A.B., M.S., Ph.D., Assistant Professor of Physiology
Howard D. Herrick, B.A., M.D., Instructor in Psychiatry
Bernice Martin Heitner, B.A.L.S., M.A., Professor of Library Science
William G. Heusel, B.S., M.D., Clinical Associate in Family Practice
Stuart Heydt, D.D.S., M.S., Assistant Instructor in Surgery (Oral)
M. Robert Hicks, B.S., M.S., Instructor in Pathology
Robert An-tone Hillyer, B.A., M.D., Clinical Instructor in Surgery
Hiram David Hilton, B.A., M.D., Clinical Assistant Professor of Surgery
Donald Vincent Hirst, A.B., M.D., Instructor in Obstetrics and Gynecology
Susan M. Hoare, B.A., M.A., Assistant Instructor in Pediatrics
Jack Hobbs, A.B., Lecturer in Physical Medicine and Rehabilitation
Paul Edmund Hodgson, M.D., Professor of Surgery and Assistant Dean for Curriculum
John J. Hoesing, A.B., M.D., Instructor in Internal Medicine
John Frederick Hofert, B.A., M.S., Ph.D., Assistant Professor of Biochemistry
Kenneth Clyde Hoffman, B.S., M.D., Assistant Professor of Pathology
Robert C. Holcombe, A.B., M.D., Assistant Professor of Internal Medicine
Marvin E. Holsclaw, B.S., M.D., Instructor in Family Practice
Edward Augustus Holyoke, B.S., M.A., M.D., Ph.D., Professor of Anatomy (Chairman of the Department)
Michael E. Holzer, Assistant Professor of Radiology
L. Thomas Hood, B.S., M.D., Associate Professor of Orthopedic Surgery (Chairman of the Department)
Marjorie J. Hook, B.S., M.P.S., Ed.D., Associate Professor of Psychiatric Nursing, Psychiatry
Harold R. Horn, A.B., M.D., Clinical Instructor in Orthopedic Surgery
Barbara J. Houghton, B.A., M.S.W., Instructor in Psychiatric Social Work, Psychiatry
Charles Robert Hucks, B.S., M.D., Clinical Associate in Family Practice
Dorothy H. Hubbard, B.A., M.S.W., Instructor in Psychiatry and in Pediatrics
Theodore Franklin Hubbard, A.B., M.S., M.D., Associate Professor of Internal Medicine
Douglas C. Hubner, B.A., M.D., Assistant Instructor in Pathology
Thomas W. Hurt, B.S., M.P.H., Assistant Professor of Preventive Medicine and Public Health
Charles Gregory Ingham, M.D., Associate in Psychiatry

*Leave of absence
Robert Joseph Innes, B.A., Ph.D., Assistant Professor of Medical Psychology, Psychiatry
Donald Robert Jackson, A.B., M.D., Assistant Professor of Internal Medicine
Herbert P. Jacob, B.S., M.S., Ph.D., Professor of Biochemistry
Lawrence Royce James, B.S., M.D., Associate Professor of Radiology
Stanislaus H. Jaroe, B.S., M.D., Assistant Professor of Internal Medicine
Melvin E. Jenkins, A.B., M.D., Professor of Pediatrics (Vice Chairman of the Department)
Richard E. Jensen, B.A., M.A., Lecturer in Physical Medicine and Rehabilitation
William Curtis Jensen, M.D., Clinical Associate in Family Practice
Roger S. Jensen, B.A., B.S., M.A., D.M., Assistant Professor of Obstetrics and Gynecology
Doris Ann Johnson, B.S., Assistant Instructor in the Division of Allied Health
George Nick Johnson, M.D., Associate Professor of Surgery
Gordon Frederick Johnson, B.A., M.D., Assistant Professor of Radiology
Gordon O. Johnson, M.D., Clinical Associate in Family Practice
Harold Gene Johnson, B.A., M.D., Clinical Associate in Family Practice
Marilyn Weber Johnson, B.S., M.P.H., Assistant Professor of Preventive Medicine and Public Health
Palmer Luther Johnson, B.S., M.D., Assistant Professor of Obstetrics and Gynecology
Virginia B. Johnson, B.S., M.S.W., Assistant Instructor in Pediatrics
Ernest O. Jones, A.B., M.S., Ph.D., Associate Professor of Radiology
Jerry Wilson Jones, B.A., M.D., Assistant Professor of Microbiology and of Pathology
John R. Jones, M.D., Shackelford Professor of Surgery (Anesthesiology) and Head, Section of Anesthesiology
Lloyd C. Jones, III, B.S., M.D., Instructor in Obstetrics and Gynecology
Robert Dale Jones, M.D., Associate in Psychiatry
Robert Eric Johnson, B.S., M.D., Assistant Professor of Internal Medicine
Virginia E. Kahle, B.S., M.S., Assistant Instructor in Pediatrics
Henry Kammler, B.S., M.D., Associate Professor of Urology
Donald G. Kanefield, B.S., M.D., Instructor in Orthopedic Surgery
F. Donald Kapp, B.S., M.D., Instructor in Pathology
Frederick William Karrier, B.S., M.D., Assistant Professor of Surgery
William E. Kass, A.B., M.A., M.D., Associate Professor of Internal Medicine
Kenneth E. P. Kaye, M.D., Assistant Professor of Psychiatry
Lawrence K. Keesinger, A.B., M.D., Assistant Professor of Biochemistry
John Charles Kennedy, B.S., M.A., M.D., Associate Professor of Surgery
Emmet M. Kenney, B.S., M.D., Assistant Professor of Psychiatry
Kenneth Jack Kenney, B.A., M.D., Clinical Associate in Family Practice
Milton O. Kepler, A.B., M.A., M.D., Associate Professor of Pediatrics
Margaret Anne Kessler, A.B., M.D., Assistant Instructor in Internal Medicine
David A. Kettleson, B.A., B.S., M.D., Instructor in Orthopedic Surgery
Kenneth Francis Kimball, B.A., M.D., Assistant Professor of Surgery
Frederick William Kommineni, D.V.M., M.S., Research Associate in Pathology
Frank Klenes, B.S., M.D., Associate Professor of Otolaryngology
Duane John Kliewer, B.S., Instructor in Pediatrics and in Division of Physical Therapy
George J. Klop, A.B., B.S., M.D., Professor of Pediatrics
James LeRoy Knoft, M.D., Assistant Professor of Internal Medicine
Yvonne F. Koob, B.A., M.L.S., Instructor in Library Science
Theodore Henry Koeppel, Jr., B.S., M.D., Clinical Associate in Family Practice
Elisabeth F. Koenig, B.A., B.S., Associate Professor of Library Science
Reinhold D. Koffler, B.S., M.D., Clinical Associate in Family Practice
V. R. Choudari Kommineni, D.V.M., M.S., Research Associate in Pathology
William S. Kramer, B.S., D.D.S., M.D., Professor of Pediatrics
Charles W. Kraul, A.B., M.D., D.U.M., Assistant Professor of Preventive Medicine and Public Health
John H. Krickbaum, A.B., M.D., Instructor in Family Practice
Mark E. Krugman, A.B., M.D., Instructor in Otolaryngology
Harold J. Kuehn, M.D., Assistant Professor of Pediatrics
Robert Benjamin Kugel, A.B., M.A., M.D., Professor of Pediatrics, Dean of the College of Medicine
Morton Howard Kulesh, B.A., M.D., Associate Professor of Pathology
Herbert D. Kupper, M.D., Clinical Associate in Family Practice
Louis R. Kurland, B.A., M.D., Instructor in Ophthalmology
Benjamin Kufner, B.A., D.D.S., Instructor in Surgery and Assistant Professor of Preventive Medicine and Public Health
Edward L. LaCrosse, B.S., Ed.M., Ed.D., Professor of Pediatrics
Sushil S. Lacy, B.Sc., M.B.B.S., M.S., Assistant Professor of Urology
Francis L. Land, A.B., M.D., Professor of Family Practice
Dennis Frank Landers, B.S., M.D., Ph.D., Assistant Instructor in Pathology and in Anatomy
Edward Langdon, B.S., M.D., Assistant Professor of Internal Medicine
James Kevin Langdon, B.A., LL.D., Instructor in Medical Jurisprudence
Shirley A. Langhus, B.S., M.D., Assistant Instructor in Psychiatry
Arden Enslin Larsen, B.S., M.S., Ph.D., Instructor in Pathology
Arthur Lee Larsen, A.B., M.D., Associate Professor of Pathology
Donald Larson, B.S., M.D., Clinical Associate in Family Practice
Dwight L. Larson, A.B., M.D., Clinical Associate in Family Practice
Margaret R. Lassek, B.S., Assistant Instructor in Medical Technology, Allied Health
John Francis Latenser, M.D., Assistant Professor of Surgery
Gerald Hugh Lathrop, B.S., Assistant Instructor in Psychiatry
Charlton Rex Latta, B.S., M.D., Assistant Professor of Ophthalmology
Kyu Y. Lee, B.A., B.S., M.S., Ph.D., Associate Professor of Biochemistry
Leonard R. Lee, B.S., M.D., Assistant Professor of Internal Medicine
Leroy William Lee, B.S., M.S., M.D., Professor of Urology (Vice Chairman of the Department)
Henry J. Lehnhoff, Jr., A.B., B.S., M.D., Professor of Internal Medicine
Robert M. Lehr, B.A., M.A.L.S., Assistant Professor of Library Science
Theodore John Lemke, M.D., Clinical Associate in Family Practice
Henry Marilyn Lemon, B.S., M.D., Professor of Internal Medicine, Director, Division of Clinical Oncology
Arthur Jerome Levens, B.S., M.D., Professor of Neurology
Gene S. Lewallen, B.A., B.S., M.D., Instructor in Orthopedic Surgery
Jack K. Lewis, B.A., M.D., Assistant Professor of Internal Medicine
Kirk Chase Lewis, A.B., M.D., Instructor in Obstetrics and Gynecology
Raymond Gerald Lewis, A.B., B.S., M.D., Assistant Professor of Internal Medicine
George William LeWorthy, B.A., M.D., Clinical Instructor in Surgery
John Liebenritz, B.Ed., Assistant Instructor in Administrative Medicine, Dean's Office
William Lilinsky, B.S., Ph.D., Professor of Biochemistry
Thomas P. K. Lim, M.D., M.S., Ph.D., Associate Professor of Physiology and of Internal Medicine
Mary L. Lindball, B.S., R.N., R.P.T., Instructor, Division of Physical Therapy
Ronald D. Loch, Research Assistant in Internal Medicine, Division of Biomedical Instrumentation
Sharon Lynn Lock, B.S., Assistant Instructor in Pediatrics
James W. Lord, A.B., M.D., Clinical Assistant Professor of Pediatrics
Marlin R. Lohff, B.S., M.D., Assistant Instructor in Pathology
James S. Long, M.D., Clinical Associate in Family Practice
Mary Jean Long, B.S., M.S., Ph.D., Assistant Professor of Pathology
Robert Stanley Long, B.S., M.D., Associate Professor of Internal Medicine
George Walter Loomis, A.B., M.D., Associate Professor of Internal Medicine
Robert W. LoPresti, A.B., M.A., Ph.D., Assistant Professor of Medical Psychology, Psychiatry
Agapito S. Lorenzo, A.A., M.D., Assistant Professor of Neurology
Robert Ellsworth Lovgren, B.S., M.D., Associate Professor of Otorhinolaryngology
Edwin Carl Lowenberg, B.S., M.S., Ph.D., Professor of Physiology
Kathryn Ann Lund, B.S., M.E.D., Assistant Instructor in Psychiatry
William E. Lundak, B.A., M.D., Assistant Instructor in Radiology
Mathew Madappally, B.S., M.S., Ph.D., Instructor in Biochemistry
Patrick John Madden, B.A., M.D., Clinical Associate in Family Practice
Bernard Magid, B.A., M.D., Assistant Professor of Obstetrics and Gynecology
Theodore A. Mahowald, A.B., Ph.D., Associate Professor of Biochemistry
Edward Marvin Malashock, B.A., M.D., Associate Professor of Urology and Associate in Physical Medicine and Rehabilitation
Darrel S. Mandel, B.S., M.D., Assistant Professor of Radiology
Edward S. Maness, B.S., M.D., Assistant Professor of Otorhinolaryngology
Marchetti, Louis J., B.A., M.D., Instructor in Urology
Deane S. Marcy, B.S., M.D., Assistant Professor of Preventive Medicine and Public Health
Hal Kennedy Mardis, B.S., M.D., Assistant Professor of Urology
Ronald L. Marshall, B.S., M.D., Assistant Instructor in Obstetrics and Gynecology
Jerard Rand Martin, B.S., M.D., Assistant Professor of Pathology
Paul Raymond Martin, M.D., Clinical Associate in Family Practice
Gwon G. Mason, R.N., B.S.N., M.S.N., Assistant Professor of Pediatrics
Roger Dale Mason, M.D., Clinical Associate in Family Practice
Jack Matthews, B.S., M.D., Instructor in Internal Medicine
John James Maiooe, Jr., M.D., Associate Professor of Internal Medicine
John T. Matschner, B.S., M.S., Ph.D., Professor of Biochemistry
John H. Mattox, B.A., M.D., Assistant Professor of Obstetrics and Gynecology
Janet M. Maule, B.A., M.S.W., Instructor in the Division of Allied Health
G. Preniss McAdie, B.S., M.D., Lecturer in Preventive Medicine and Public Health
Robert E. McCarthy, B.S., M.S., Ph.D., Associate Professor of Microbiology
Harry Webber McFarland, A.B., M.D., Professor of Medical Microbiology (Chairman of the Department) and Professor of Pathology
Dean Allen McGee, B.S., M.D., Clinical Associate in Family Practice
Kenneth T. McGinnis, B.S., M.D., Clinical Assistant Professor of Obstetrics and Gynecology
Mailda McIntire, A.B., M.D., Assistant Professor of Pediatrics
Carleen A. McIntyre, B.S., Assistant Instructor in Pathology
Charles W. McLaughlin, Jr., B.S., M.D., Professor of Surgery
John McMillan, B.S., M.A., Lecturer in Radiology
Clarence Austin McWhorter, B.S., M.D., Professor of Pathology (Chairman of the Department)
Roland D. Meader, B.S., M.A., Ph.D., Professor of Anatomy
Paul M. Meadows, B.A., M.D., Eppley Professor of Radiation Therapy, Radiology
Benjamin R. Meckel, B.S., M.D., Clinical Associate in Family Practice
Clyde Avery Medlar, B.S., M.D., Clinical Associate in Family Practice
Myron A. Mehlman, B.S., Ph.D., Associate Professor of Biochemistry
Richard Meier, M.D., M.A., M.D., Assistant Professor of Ophthalmology
Shirley Ann Melcher, B.A., M.S.W., Instructor in Psychiatric Social Work, Psychiatry
William C. Melcher, B.A., M.D., Instructor in Anesthesiology, Surgery
Lawrence A. Menahan, B.S., M.S., Ph.D., Research Assistant Professor of Internal Medicine and of Biochemistry
Frank Menolascino, B.A., M.D., Associate Professor of Psychiatry and of Pediatrics; Clinical Director, Division of Preventive and Social Psychiatry
Robert Haskell Messer, M.D., Associate Professor of Obstetrics and Gynecology, Assistant Dean for Graduate Education
Lee Roy Meyer, B.S., M.D., Assistant Professor of Internal Medicine
Arleen Michael, B.S., M.S., Instructor in Psychiatry
Richard Royce Miles, B.S., M.S., M.D., Assistant Professor of Physiology
Bruce A. Miller, B.S., M.D., Instructor in Orthopedic Surgery
Daniel Martin Miller, B.S., M.D., Associate Professor of Surgery
David T. Miller, A.B., Ph.D., Instructor in Physiology
Norman Gustav Miller, B.S., M.S., Ph.D., Professor of Microbiology
Otis William Miller, B.S., M.D., Clinical Associate in Family Practice
Warren Robert Miller, A.B., M.D., Clinical Associate in Family Practice
David William Minard, B.S., M.D., Assistant Professor of Orthopedic Surgery
Sidney S. Mirvish, B.S., M.S., Ph.D., Associate Professor of Biochemistry
Nirmal K. Mishra, B.S., M.S., Ph.D., Instructor in Obstetrics and Gynecology, and in Biochemistry
Howard Eugene Mitchell, M.D., Clinical Assistant Professor of Orthopedic Surgery
Yoshio Miyazaki, B.S., M.D., Assistant Professor of Pediatrics
Samuel F. Moessner, B.S., M.D., Clinical Instructor in Surgery
Ulrich Mohr, M.D., Senior Visiting Professor of Pathology
George L. Monto, A.A., B.S., M.D., Assistant Professor of Internal Medicine
William H. Moorcroft, B.A., Ph.D., Instructor in Medical Psychology, Psychiatry
Ralph Cory Moore, B.S., M.D., Professor of Radiology
Paul Keniston Moore, B.A., M.D., Associate Professor of Pediatrics
Donal Harlan Morgan, B.S., M.D., Clinical Associate in Family Practice
C. Michael Moriarty, B.S., M.S., Ph.D., Assistant Professor of Physiology
Haskell Morris, B.A., M.D., Associate Professor of Internal Medicine and of Physical Medicine and Rehabilitation; Director of Student Health Service
Gerald Lee Morris, B.S., M.D., Assistant Instructor in Pathology
Margaret Morris, B.S., Assistant Instructor in Pathology
William E. Morrison, B.S., M.S., Ph.D., Associate Professor of Pediatrics
William Howard Morrison, B.S., M.D., Professor of Ophthalmology
Clementine Morrow, B.S., M.S., Instructor in Psychiatry
Carlos Roberto Mota, B.S., M.D., Assistant Professor of Surgery
Bruce C. Moulton, A.B., M.S., Ph.D., Assistant Professor of Obstetrics and Gynecology, Instructor in Biochemistry
Robert R. Moutrie, B.S., M.S., Instructor in Administrative Medicine, Dean's Office
Wilbur A. Muehlig, A.B., M.D., Associate Professor of Surgery and of Neurology
Phyllis A. Mueller, B.S., M.A., Assistant Instructor in Pathology
Charles George Muffly, B.S., M.D., Clinical Associate in Family Practice
Robert Benton Muffly, B.A., M.D., Associate Professor of Psychiatry and of Internal Medicine

William Charles Mulry, B.A., M.D., Instructor in Radiology

Willis Philip Mundt, A.A., M.D., Assistant Professor of Radiology

Horace Varnum Munger, A.B., M.D., Clinical Assistant Professor of Urology

John E. Murphy, B.A., M.D., Clinical Associate in Family Practice

Mozio McNeil Musselman, B.S., M.D., Professor of Surgery (Chairman of the Department)

Grant George Myers, B.S., M.S., Ph.D., Associate Professor of Physiology

H. Dey Myers, B.S., M.D., Clinical Associate in Family Practice

Dorothy Josephine Nagengast, B.S., M.D., Clinical Associate in Family Practice

Richard M. Nash, B.A., M.A.L.S., Associate Professor of Library Science

Orvis A. Neely, B.A., M.D., Clinical Assistant Professor of Radiology

Delbert Delose Neis, A.B., M.D., Associate Professor of Surgery

Joanna Nelle, B.S., Assistant Instructor in Psychiatry

Lyle Herman Nelson, B.A., M.D., Clinical Associate in Family Practice

Norma Mae Nelson, B.M.Ed., M.S.W., Instructor in Obstetrics and Gynecology

Myrna Carol Newland, B.A., B.S., M.D., Instructor in Surgery (Anesthesia)

James Ervin Nickel, B.A., M.D., Instructor in Obstetrics and Gynecology

Karl Friedrich Niehaus, B.S., M.D., Instructor in Internal Medicine

Stephen M. Nielsen, B.A., M.S., M.D., Assistant Professor of Internal Medicine

Donald Charles Nilsson, B.A., M.D., Assistant Professor of Pediatrics

Thomas W. Norris, A.B., M.A., Ph.D., Associate Professor of Audiology and Speech Pathology, Director of Division of Audiology and Speech Pathology

William H. Northwall, B.A., M.D., Assistant Instructor in Radiology

Edmund Anthony Novak, B.S., M.S., M.D., Associate Professor of Internal Medicine and of Radiology

William Edwin Nutzman, B.A., M.D., Assistant Professor of Internal Medicine

Dan Atchison Nye, M.D., Assistant Professor of Internal Medicine

Byron Bowers, B.A., M.D., Associate Professor of Pediatrics

Leo O'Brien, M.D., Assistant Professor of Internal Medicine

Francis J. O'Connor, A.B., M.S.W., Instructor in Psychiatric Social Work, Psychiatry

John P. O'Gara, B.S., M.D., Instructor in Surgery (Anesthesia)

Kiyoshi Patrick Okura, B.A., M.A., Assistant Professor of Psychiatry

Leland J. Olson, A.B., M.D., Associate Professor of Obstetrics and Gynecology

Philip Brian Olson, M.D., Assistant Instructor in Internal Medicine

Raymond H. Olson, B.S., M.S., M.D., Clinical Associate in Family Practice

Richard Otto Olson, M.D., Assistant Instructor in Surgery

Paul Bryant Olson, B.S., M.D., Clinical Associate in Family Practice

Sharon Lee Ongert, B.S., M.S., Assistant Instructor in Otorhinolaryngology

George William Orr, B.S., M.D., Assistant Professor of Obstetrics and Gynecology

Robert George Osborne, B.S., M.D., Associate Professor of Psychiatry

William G. Padgett, B.S., M.D., Instructor in Pathology

Harlan Louis Papenfuss, A.B., M.S., Assistant Professor of Pathology

Donald E. Parkison, A.B., M.S., M.D., Instructor in Family Practice

James E. Parsons, B.S., M.S., M.D., Instructor in Microbiology

Frederick Franz Paustian, B.S., M.D., Professor of Internal Medicine and of Physiology

Warren Harland Pearse, B.S., M.D., Foundation Professor of Obstetrics and Gynecology (Chairman of the Department), Assistant Dean

Paul Hammond Pearson, M.D., C. Louis Meyer Professor of Child Health, Pediatrics, Professor of Preventive Medicine

Jean B. Peck, B.S., M.D., Assistant Professor of Psychiatry, Director of Training in Occupational Therapy

Earl Stanley Pederson, B.S., M.A., M.D., Professor of Radiology and Assistant Professor of Anatomy

Richard J. Pellegrino, B.A., M.D., Assistant Professor of Neurology and of Pediatrics

John Walker Pemberton, B.S., M.S., M.D., Instructor in Ophthalmology

Maurice Lewis Pepper, B.S., M.D., Associate Professor of Internal Medicine

Wayne Perdue, B.S., M.D., Instructor in the Division of Physical Therapy

Samuel H. Perry, A.B., M.D., Assistant Professor of Pediatrics and of Family Practice

George Henry Pester, A.B., M.D., Assistant Professor of Surgery

Maurice Hancock Peterson, B.S., A.B., M.A., M.D., Associate Professor of Psychiatry

Paul L. Peterson, M.D., Clinical Assistant Professor of Otorhinolaryngology

Clayton Lloyd Pettipiece, B.S., M.D., Instructor in Psychiatry

Theodore R. Pfundt, A.B., M.D., Professor of Pediatrics

Richard Chris Pieler, M.D., Assistant Professor of Orthopedic Surgery

Ruth E. Pohle, B.A., Assistant Instructor in Pathology
John Wesley Porter, B.S., M.D., Assistant Professor of Surgery
Stanley Ernest Potter, M.D., Associate Professor of Surgery
Peyton Thomas Pratt, A.B., B.S., M.D., Associate Professor of Internal Medicine
Bert W. Pyle, Jr., M.A., Instructor of Administrative Medicine, Psychiatry
Merton A. Quaife, A.B., M.D., M.S., Associate Professor of Radiology and of Internal Medicine
Gary L. Quast, B.S., M.A., Instructor in Surgery
Bert W. Pyle, Jr., B.S., M.A., Instructor of Administrative Medicine, Psychiatry
Peyton Thomas Pratt, A.B., B.S., M.D., Associate Professor of Internal Medicine
Hans Rath, B.A., M.D., Assistant Professor of Surgery
Gary L. Quast, B.S., D.D.S., M.S., Instructor in Surgery
Robert Eugene Quick, B.S., M.D., Clinical Associate in Family Practice
Chita Ranjan Raha, B.S., Ph.D., Associate Professor of Biochemistry
James Edgar Ramsay, B.A., M.S., M.D., Clinical Associate in Family Practice
John T. Ramsell, B.A., M.D., Assistant Professor of Surgery
Hans Rath, B.A., M.D., Associate Professor of Surgery
Robert Eugene Quick, B.S., M.D., Clinical Associate in Family Practice
Chita Ranjan Raha, B.S., Ph.D., Associate Professor of Biochemistry
James Edgar Ramsay, B.A., M.S., M.D., Clinical Associate in Family Practice
John T. Ramsell, B.A., M.D., Instructor in Ophthalmology
John Arthur Rasmussen, M.D., Associate Professor of Surgery
Mary A. Quaife, A.B., M.D., M.S., Associate Professor of Radiology and of Internal Medicine
Gary L. Quast, B.S., M.A., Instructor in Surgery
Peyton Thomas Pratt, A.B., B.S., M.D., Associate Professor of Internal Medicine
Hans Rath, B.A., M.D., Assistant Professor of Surgery
Raymond E. Records, B.S., M.D., Professor of Ophthalmology (Chairman of the Department)
John E. Redding, A.B., M.D., Professor of Surgery (Anesthesia)
Bart B. Rees, A.B., M.A., M.D., Associate Professor of Surgery
Edwin A. Rejda, B.S., M.A., Director of Computer Center with rank of Assistant Professor of Computer Science
C. Lee Reelsdorf, B.A., M.D., Assistant Professor of Family Practice
Paul R. Reiter, B.A., M.D., Assistant Professor of Obstetrics and Gynecology
Jack V. Richard, B.S., M.D., Assistant Instructor in Obstetrics and Gynecology
Charles Richardson, Jr., B.S., M.S.W., Assistant Professor of Psychiatric Social Work
Mary C. Riedel, B.A., M.S.W., Instructor in Psychiatric Social Work, Psychiatry
Perry G. Rigby, B.S., M.D., Professor of Internal Medicine and Anatomy; Director, Division of Hematology
John C. Robbins, B.S., M.D., Instructor in Radiology
Blaine Y. Rohman, B.A., M.D., Assistant Professor of Pathology
Larry Edwin Rofman, M.D., Assistant Professor of Obstetrics and Gynecology
Earl Alvin Rogers, B.S., M.D., Associate Professor of Preventive Medicine and Public Health
Charles Morton Root, M.D., Assistant Professor of Internal Medicine
Guenter H. Roso, B.S., M.S., M.D., Associate Professor of Psychiatry and of Physiology
Rolf Carl Rosenlof, M.D., Associate Professor of Internal Medicine
Allan E. Ross, B.S., Research Assistant in Biochemistry
William F. Roth, Jr., Ph.B., M.D., Professor of Psychiatry
Jack V. Richard, B.S., M.D., Assistant Instructor in Obstetrics and Gynecology
Charles Richardson, Jr., B.S., M.S.W., Assistant Professor of Psychiatric Social Work
William R. Ruegamer, B.S., M.S., Ph.D., Professor of Biochemistry (Chairman of the Department)
William Leonard Rumbold, A.B., M.D., Associate Professor of Obstetrics and Gynecology
Elliott L. Rustad, B.A., M.D., Instructor in Dermatology
Marian Ruslija, A.B.S., D.V.M., Instructor in Pathology
Wayne L. Ryan, B.S., Ph.D., Research Professor of Obstetrics and Gynecology, and Professor of Biochemistry
Mary Ellen Sacksler, B.S., M.A., Assistant Professor, Division of Physical Therapy
Kamal Sadjadpour, M.D., Associate Professor of Neurology
John Cuddington Sage, B.A., M.D., Assistant Professor of Internal Medicine
Herbert Blake Saichuk, B.S., M.D., Associate Professor of Radiology
Myron Earle Samuelson, A.B., M.D., Clinical Associate in Family Practice
Harry L. Sasse, Jr., B.A., M.D., Assistant Professor of Surgery
Minnie Sasser, B.S., M.S., Instructor of Medical Psychology, Psychiatry
James Edward Saulsbury, M.D., Assistant Instructor in Internal Medicine
Charles Joseph Sauls, B.S., M.D., Clinical Associate in Family Practice
Colin Burwell Schack, A.B., M.D., Assistant Professor of Obstetrics and Gynecology
Irving J. Schaefer, Instructor in Psychiatry
Evelyn C. Schellak, A.B., M.S.S.W., Instructor in Internal Medicine
John Schenk, B.S., M.D., Assistant Professor of Pathology
John Rudolph Schenken, B.S., M.D., Professor of Radiology
James Paul Schliche, B.A., M.D., Assistant Professor of Radiology
Herbert F. Schliesser, B.S., M.A., Ph.D., Associate Professor of Child Health, Pediatrics
Francis Lawrence Schmehl, B.S., M.S., S.D., Professor of Chemistry, Biochemistry

* Leave of absence
Gilbert C. Schreiner, A.B., M.D., Associate Professor of Pediatrics
Richard C. Schripsema, A.B., M.B.A., Hospital Administrator with rank of Associate Professor; Director of Business and Finance, University Medical Center
Loyd R. Schultz, M.S., M.D., Assistant Professor of Pediatrics and of Surgery
John C. Schultz, M.D., Clinical Associate in Family Practice
Steven A. Schwid, B.A., M.D., Assistant Professor of Internal Medicine
John William Scott, B.A., M.D., Assistant Professor of Pathology
Joseph C. Scott, Jr., B.S., M.D., Associate Professor of Obstetrics and Gynecology
Monte Myrl Scott, B.S., M.D., Assistant Professor of Internal Medicine
Paul Milton Scott, B.S., M.D., Clinical Associate in Family Practice
James Robert Scott-Miller, B.A., M.D., Assistant Professor of Orthopedic Surgery
Ronald L. Seeley, B.A., M.D., Assistant Instructor in Ophthalmology
Arthur R. Sellakumar, B.V.S., M.S., Assistant Professor of Pathology
Robert D. Sellers, B.A., M.D., Ph.D., Professor of Surgery
Malihew Joseph Severin, B.S., M.S.M., Ph.D., Assistant Instructor in Microbiology
Charles B. Severyn, B.A., M.S., Ph.D., Associate Professor of Anatomy and of Pathology
Irving Shapiro, B.S., M.D., Clinical Associate in Family Practice
Robert F. Shapiro, B.S., M.D., Assistant Instructor in Pathology
Sharon Ann Shaw, B.A., M.S.W., Instructor in Psychiatric Social Work, Psychiatry
Ellen Sue Sherman, B.S., Assistant Instructor in Pediatrics
Paul D. Sherry, A.B., M.A., Ph.D., Assistant Professor of Anatomy
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Joseph C. Shipp, B.S., M.D., Professor of Internal Medicine (Chairman of the Department)
Bryce George Shopp, B.A., M.D., Clinical Associate in Family Practice
Philippe Shubik, B.M.B.Ch., Ph.D., Eppley Professor of Oncology, Pathology, and Director of Eugene C. Eppley Institute
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Donald Paul Skoog, B.A., M.D., Assistant Professor of Pathology
F. Miles Skultety, B.A., M.D., Ph.D., Shackelford Professor of Neurosurgery and Neuroanatomy and Professor of Anatomy
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Edgar Harold Smith, B.S., M.D., Instructor in Pathology
Francis D. Smith, B.S., M.D., Assistant Professor of Pathology
Jane E. Smith, B.A., Assistant Instructor in Psychiatry
Joseph H. Smith, B.A., M.D., Assistant Professor of Surgery
Lloyd D. Smith, B.S., M.D., Instructor in Surgery (Anesthesia)
Richard Dale Smith, A.B., M.D., Associate Professor of Orthopedic Surgery
Robert L. Smith, D.D.S., Instructor in Surgery
Arthur Soller, B.S., Ph.D., Research Assistant Professor of Microbiology
Theo Brown Sonderregger, B.S., M.A., Ph.D., Assistant Professor of Psychiatry
Michael F. Sorrell, B.S., M.D., Assistant Professor of Internal Medicine
James F. Speers, B.S., M.D., M.P.H., Assistant Professor of Preventive Medicine and Public Health
Robert Morton Spire, B.A., LL.B., Associate Professor of Medical Jurisprudence
George Ewing Stafford, B.S., A.B., M.D., Clinical Professor of Pediatrics and Assistant Professor of Preventive Medicine and Public Health
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Richard W. Steenburg, M.D., Professor of Surgery
Robert Paul Steege, B.S., M.D., Clinical Associate Professor of Psychiatry
Jack Michael Stemper, B.S., M.D., Instructor in Internal Medicine

*Leave of absence
Frej Stenback, B.S., M.D., Visiting Assistant Professor of Pathology
David V. Stephenson, B.S., M.D., Assistant Professor of Surgery
Frank A. Stewart, B.S., M.D., Clinical Associate Professor of Pediatrics
Hubert Clare Stewart, A.B., M.D., Clinical Associate in Family Practice
Marylin M. Stewart, B.A., M.S., Assistant Instructor in Pathology
Warren W. Stinson, B.S., M.D., Ph.D., Assistant Professor of Anatomy
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Fordyce E. Stivers, B.A., M.D., Assistant Instructor in Otorhinolaryngology
Patricia Cole Silvins, B.A., M.D., Clinical Assistant Professor of Pediatrics
Jacqueline Gale Stocker, B.A., M.S.W., Instructor in Psychiatric Social Work, Psychiatry
Daniel B. Stone, M.D., B.S., D.P.M., Professor of Internal Medicine (Vice Chairman of the Department)
Frank Paschal Stone, A.B., M.D., Clinical Assistant Professor of Orthopedic Surgery
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Edmund J. Trembath, M.B., B.S., Research Assistant Professor of Pediatrics
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Charles R. Van Fleet, B.G.Ed., Instructor in Psychiatry
Gerard Van Leeuwen, B.A., M.D., Professor of Pediatrics (Chairman of the Department)
Jerald Lee Varner, B.S., M.S., Instructor in Physiology
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Stephen Edward Wallace, M.D., Clinical Associate in Family Practice
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Paul T. Walters, B.S., M.S., Research Assistant in Biochemistry
Carl Arthur Walvoord, A.B., M.D., Clinical Associate in Family Practice
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Vermon Graves Ward, B.A., M.D., Associate Professor of Internal Medicine
Frederick Ware, Jr., Professor of Physiology and of Internal Medicine
Robert W. Waters, B.S., M.D., Clinical Associate in Family Practice
Dean Carleton Walland, B.A., M.S., M.D., Assistant Professor of Surgery (Anesthesia)
Samuel L. Watson, B.A., M.D., Assistant Professor of Internal Medicine
Arthur L. Weaver, M.S., M.D., Instructor in Internal Medicine
Walt Franklin Weaver, B.S., M.D., Instructor in Internal Medicine
Frederick S. Webster, A.B., M.D., Clinical Instructor in Orthopedic Surgery
W. Wallace Webster, D.D.S., Professor of Surgery (Oral)
David Sherrill Weeks, M.D., Clinical Associate in Family Practice
Donald J. Weidler, B.A., B.S., M.D., Ph.D., Assistant Professor of Physiology
Daniel E. Weiner, B.A., M.S., M.D., Associate Professor of Physiology
Robert Clark Weldon, B.A., M.D., Clinical Associate in Family Practice
Norman D. West, B.S.M., M.D., Assistant Professor of Psychiatry
Robert L. Westbrook, B.A., M.D., Clinical Associate in Family Practice
Robert Harris Westfall, B.S., M.D., Assistant Professor of Surgery
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Wayne Kirk Weston, B.A., M.D., Clinical Associate in Family Practice
Robert White, B.A., M.S., Ph.D., Associate Professor of Microbiology
John Gunsaul Wiedman, A.B., M.D., Clinical Instructor in Surgery
Clark D. Wieland, B.S., M.D., Assistant Professor of Psychiatry
Robert Spencer Wigtion, B.S., M.A., M.D., Professor of Neurology and of Psychiatry
Robert Swift Wigtion, B.A., M.D., Instructor in Physiology
Violet M. Wilder, A.B., M.A., Ph.D., Associate Professor of Biochemistry
Donald E. Wilkinson, M.D., Clinical Associate in Family Practice
Barbara Williams, Assistant Instructor of Medical Psychology, Psychiatry
James G. L. Williams, B.S., Ph.D., Professor of Psychiatry and Research Professor of Surgery
Margaret A. Williams, B.S., M.S.W., Assistant Professor of Psychiatric Social Work, Psychiatry
Nannette L. Williams, B.A., M.L.S., Assistant Professor of Library Science, Regional Medical Library
Carlyle E. Wilson, A.B., B.S., M.D., Associate Professor of Surgery
Rex Woodrow Wilson, A.B., M.S., M.D., Clinical Associate in Family Practice
Richard Barr Wilson, A.B., M.D., Professor of Pathology
William J. Wilson, A.B., M.D., Foundation Professor of Radiology (Chairman of the Department)
Hobart E. Wiltse, B.S., M.D., Ph.D., Assistant Professor of Pediatrics and of Biochemistry
Harley V. Winchester, B.S., Assistant Instructor in Educational Therapy, Psychiatry
Jack Frederick Wisman, A.B., M.D., Instructor in Psychiatry
Cecil Legriel Wittson, B.S., M.D., Professor of Psychiatry, President of the Medical Center
Gerald L. Wolf, B.S., M.S., Ph.D., M.D., Assistant Professor of Physiology and of Internal Medicine
Wolf P. Wolfensberger, B.A., M.A., Ph.D., Associate Professor of Psychiatry and of Pediatrics
James M. Wood, B.S., M.S., Ph.D., Associate Professor of Pediatrics
William D. Wood, A.B., Ph.D., Assistant Professor of Medical Psychology, Psychiatry
Donald L. Woodford, Instructor in Optics, Ophthalmology
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J. Lewis Yager, A.B., Ph.D., Assistant Professor of Medical Psychology, Psychiatry
Charles T. Yarington, Jr., A.B., M.D., Professor of Otorhinolaryngology (Chairman of the Department)

* Leave of absence
Elwood Edward Yaw, B.S., M.D., Clinical Associate in Family Practice
Anthony J. Yonkers, M.D., Assistant Professor of Otorhinolaryngology
Howard Fulton Yost, B.S., A.B., M.D., Clinical Instructor in Obstetrics and Gynecology
George A. Young, Jr., M.D., Associate in Psychiatry
Laurence Alan Zacharia, A.B., B.S., M.D., Assistant Professor of Internal Medicine
Frank Marshall Zahller, M.D., Associate Professor of Pediatrics
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Clarence Zimmer, A.B., M.D., Clinical Associate in Family Practice
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Kenneth Barjenbruch, M.D.
John Eisenach, M.D.
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Paul Gregory, M.D.
Richard Koefoot, M.D.
Kanchan Lodhia, M.D.
James Saulsbury, M.D.
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M. N. Workhoven, M.D.
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Gladys Beddoo, M.D.
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Sherman Don, M.D.
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Jerry Freeman, M.D.
Fordyce Stivers, M.D.
Christopher Moller, M.D.

PATHOLOGY
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Gary Vogelsberg, D.D.S.

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Robert Calkins, M.D.
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John Donaldson, M.D.
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UROLOGY
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Timothy B. Denzler, M.D.
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Sidney Mirvish, Ph.D.
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Charles Richardson, Jr., M.S.W.
Mary Catherine Riederer, M.S.W.
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Theo B. Sonderegger, Ph.D.
Phillip H. Starr, M.D.
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Stuart H. Tubis, M.D.
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Cecil L. Wittson, M.D.
Wolf P. Wolfensberger, Ph.D.
William D. Wood, Ph.D.
J. Lewis Yager, Ph.D.
George A. Young, Jr., M.D.
COLLEGE OF MEDICINE

History.—The legislative Act of February 15, 1869, provided for the formation of the University of Nebraska at Lincoln, and included provision for a college of medicine. In 1883, the University of Nebraska College of Medicine was established at Lincoln. It continued in operation until the 1887 session of the Legislature withdrew its appropriation, necessitating discontinuance of the college on May 19, 1887. The Omaha Medical College, incorporated at Omaha in 1881, became a part of the University of Nebraska in 1902. The merger resulted in the first two years of the four-year medical course being given in Lincoln and the last two years in Omaha. Since 1913 the entire four-year course has been given in Omaha. The College of Medicine is a component of the University of Nebraska Medical Center, one of the three major campuses of the University of Nebraska system.

Standing.—The present value of the land, buildings, and equipment of the College of Medicine approximates $40,000,000. A strong faculty is meeting the demands of the expanding requirements of medical education. Excellent clinical facilities are provided through the University Hospital and clinics as well as other affiliated hospitals.

The College of Medicine meets the requirements of the most exacting state examining and licensing boards. Its diploma grants the holder all privileges accorded to graduates of any medical college in the United States. It is a member of the Association of American Medical Colleges and is approved by the Council of Medical Education and Hospitals of the American Medical Association. It maintains high standards in instructional staff and content of courses.

The College of Medicine operates a four-year, fully accredited program leading to the Doctor of Medicine degree. The University Hospital also provides internship and residency programs in most of the major medical specialties.

The course of medicine covers four years of 36 to 48 weeks each. The first two years in medicine, in general, include those fundamental sciences which form the basis for clinical studies of the last two years. Reflecting the changing needs of a nation and a corresponding expansion of medical colleges, an increased emphasis is being directed toward curriculum changes which introduce both freshman and sophomore students to clinical applications of these fundamental subjects. A Physician's Augmentation Program was instituted in 1970–1971 which enables a student to complete his M.D. degree in three years. (See pages 27, 48). For both programs the last two years are spent largely in the study of patients in the wards and outpatient departments of the hospital and its component facilities such as the Eppley Institute for Research in Cancer and Allied Diseases, the C. Louis Meyer Children's Rehabilitation Institute, and the Nebraska Psychiatric Institute as well as affiliated private hospitals.

The objective method is followed in laboratories and clinical instruction. In all courses students are encouraged to pursue individual work, meeting in small groups with laboratory and clinical instructors.

APPLICATIONS FOR ADMISSION

Admission to the University of Nebraska College of Medicine is granted without regard to race, color, sex, or religion.
In considering scholastic records of applicants, greater weight is given to the quality of work than to an excess of credit hours over the minimum required number. Consideration is given also to appraisals of character, personal interviews, scores on the Medical College Admission Test and general fitness and promise of the candidate.

A limited number of students from states other than Nebraska and from foreign countries will be accepted for the freshman class. It is the policy of the Committee on Admissions to require that foreign students spend at least one year, and preferably two, studying in an undergraduate college in this country before applying for admission to the College of Medicine. This policy has been established in order that the applicant may become familiar with the language, customs, and methods of teaching in the United States, and so that the Committee can obtain a better evaluation of his qualifications and preparation for medicine.

APPLICATION PROCEDURE

The University of Nebraska College of Medicine is a participant in the American Medical College Application Service (AMCAS) of the Association of American Medical Colleges. Participation was effective beginning with applicants of 1970 for the class entering in 1971. Application Request Cards for 1972 are available from premedical advisors and from participating medical schools. Forward your requests to the Assistant Registrar, College of Medicine, 42nd and Dewey, Omaha, Nebraska 68105.

Complete instructions for proceeding with the application will be received with the application packet received from the above source. Careful attention to all details listed will expedite the handling of applications. The application will be processed by AMCAS and forwarded to the University of Nebraska College of Medicine beginning in July, 1971. No application for first-year medical students will be accepted which has not been processed by AMCAS.

Upon receipt of your application from AMCAS, the University of Nebraska College of Medicine will request, in addition, the following:

1. Two recent unmounted photographs, 2 x 2 inches head size;
2. At least two character appraisals from professors of premedical sciences, preferably chemistry, zoology, or physics; or official report of Premed Committee;
3. The result of the Medical College Admission Test. Applicants will take the test not later than the fall of the year preceding intended entrance. Information concerning this test may be obtained from the premedical advisor of the College of Arts and Sciences; from the Psychological Corporation, 304 East 45th Street, New York, New York, 10017; or the Assistant Registrar of the College of Medicine. Students should communicate directly with the Psychological Corporation for specific details.
4. Supplementary transcripts of academic work completed subsequent to submission of the original transcripts to AMCAS should be sent, as they become available, only to those medical schools where one's application is still under consideration.

A personal interview with members of the Committee on Admissions is required of all students before final acceptance will be offered. Interview sessions will be held at the campus of the University of Nebraska in Lincoln in November and December. Interviews will be given at the College of Medicine on stated dates, by request, and if necessary by designated persons in or near the applicant's location if it is impossible,
for adequate reasons, to come to Nebraska. Inquiries should be made of the premedical advisers at Lincoln or of the Assistant Registrar of the College of Medicine regarding appointments for interviews.

Any applicant who has previously applied for admission and has not been accepted or who fails to enroll after an acceptance must re-apply in the regular manner if he wishes consideration for a subsequent year.

The Physician’s Augmentation Program, instituted in 1970-71, allows a student to complete the requirements for the M.D. degree in three years. Classes begin in the summer quarter rather than the fall and continue for 48 weeks of each 12-month period. This program is funded by the Department of Health, Education and Welfare. The requirements for admission are the same as those for the four-year program. Tuition is also the same. Selection is made by writing the entire entering freshman class to ask them to signify their interest in participating in the three-year course. From those responding affirmatively, the Admissions Committee chooses the members of this class.

Advanced Standing.—Application for admission by transfer to the second or third year medical classes will be considered from students attending medical schools approved by the Council on Medical Education and Hospitals of the American Medical Association and if a vacancy exists. An applicant for admission to advanced standing should request an application form from the Assistant Registrar of the College of Medicine, 42nd Street and Dewey Avenue, Omaha, Nebraska 68105. He must furnish evidence that he has satisfactorily completed courses equivalent in kind and amount to those taken by the class to which admission is sought. He must also present a letter of recommendation from the dean of the medical school last attended. The University of Nebraska College of Medicine reserves the right in every case to give examinations in any or all subjects in which credit is requested.

United States citizens desiring to apply for transfer from a foreign to a United States medical school should note that to reduce duplication of effort in the procedure used in the past, a Coordinated Transfer System (COTRANS) has been devised by the Association of American Medical Colleges Group on Student Affairs in cooperation with the National Board of Medical Examiners. The University of Nebraska College of Medicine Participates in the COTRANS program. As of February 1, 1970, any U.S. citizen wanting to apply for transfer from a foreign medical school to the University of Nebraska College of Medicine and to take the NBME tests must do so via the COTRANS program. The applicant should request instructions from the Coordinated Transfer System (COTRANS) of the Association of American Medical Colleges, One Dupont Circle, N.W., Washington, D.C. 20036. The University of Nebraska College of Medicine usually, but not always, has only one or two places open at the sophomore level for applicants under this program. Because of the nature of our curriculum, it is not possible for this school to offer advanced standing to United States citizens from foreign medical schools at any level above the sophomore year.

No student coming from another school will be allowed any privileges in this school which would have been denied him in the school which he leaves.

No student will be admitted to advanced standing in any class while he has a delinquency in any subject. No student may become a candidate for graduation unless he has spent the last two years in residence at this college.
In accordance with the recommendation of the Association of American Medical Colleges, the College of Medicine does not grant any time credit toward the Doctor of Medicine degree to holders of a bachelor's degree; this means that the total time spent by each student taking his medical degree must include, as a minimum, three or four years of registration in a medical college, the last two years of which must be in residence in the University of Nebraska College of Medicine.

The granting of transfer credit is at the discretion of the Committee on Admissions. Admission to any class does not necessarily carry with it credit in all work previously done by the class since the Committee on Admissions has the right to demand satisfactory evidence of the completion of previous work in that subject equal to that required of the students of this College, and in case the work is not equal to such requirement, the deficiency stands against the student as an "incomplete" until removed.

If a student has been dropped from another medical school because of poor scholarship or unsatisfactory conduct, he is not acceptable for admission to the University of Nebraska College of Medicine except in rare and unusual circumstances.

GENERAL CONSIDERATIONS IN PLANNING A MEDICAL EDUCATION

The educational program leading to the degree of Doctor of Medicine begins before the student enters medical school. The content and quality of his professional training are vital. It is essential that the student and his advisors have a clear understanding of the objectives which are sought.

The course of study in the College of Medicine is designed to produce an unspecialized physician, soundly grounded in modern science, who, after a variable period of postgraduate education and training, is competent to enter his chosen field of medicine. In broad scope, medical education has three end products. The first, in terms of numbers, is the practicing physician. In addition, the medical investigator and the medical teacher are products of the same educational process. All three are essential to the growth and application of knowledge in the field of medicine. Two of these, the practicing physician and the medical teacher, must be capable both of practicing an art and of applying the natural sciences to medicine. Furthermore, relatively few medical investigators will do research without some responsibility in the teaching or practice of medicine. The Doctor of Medicine, whether he embodies one or all three of these products, deals with people as individuals and as a society. The art of applying scientific methods in the preservation of health and in the treatment of the ill requires that the physician not only be well trained in these methods but also well aware of his limitations.

The growing complexity of our society makes it increasingly necessary that the physician be well founded in the humanities which put him in touch with his society, not only to recognize health needs and to be informed of available facilities, but also to gain an understanding and compassion which are basic to the art of healing. The rapid development of medicine as an applied science, requiring quantitative precision and analytical reasoning in diagnostic and therapeutic procedures, is also placing an increasing premium upon excellence of preparation in these areas. The minimum educational requirements of the past are no longer adequate.
While it should be recognized that there is almost no knowledge or experience which cannot be of value to one preparing for the practice of medicine, it is very clear that the optimum use of one's time in such preparation can be realized only when wise choices are made on the basis of relative value. With time at a premium, the fact that there are directions of emphasis which are definitely more helpful than others is reason enough for listing recommendations for admission to the College of Medicine. This is only a beginning, however, and many choices of electives must be made in high school and college to complete a good preparation for the study of medicine. Recommendations here are intended not to exclude any field of major interest but rather to point to areas in which the limited available time can be spent most advantageously. Not only is the area of study to be considered but also the academic level. When more than one course in the same subject is offered, the student is strongly advised to choose the more substantial rather than the more elementary course. Occasionally, a choice for a given course is wisely made on the basis of the excellent quality of instruction and the depth of scholarship involved irrespective of the area of study.

The following specific educational recommendations have been chosen in recognition of the fact that medicine is progressively becoming more of a quantitative science. To follow adequately and to use these current developments the student must be facile with quantitative and analytical methods. However, the physician still must minister to the needs of the whole patient, and he must be prepared to assume an important role in his society. Thus it is imperative that the student acquire a sufficiently broad experience to meet these demands.

SPECIFIC EDUCATIONAL RECOMMENDATIONS

High School.—This should be a strong college preparatory course. It is recommended that the student complete two years of study in a foreign language, four years of English, and as much mathematics and science as possible.

College or University.—A minimum of 90 semester hours (three years of college work) in an accredited college is normally required. In exceptional circumstances, 60 semester hours may be accepted. To provide an opportunity for scholarship in depth, the completion of a college major is strongly recommended. The completion of a bachelor's degree is desirable. In most instances, preparation for medical school can best be achieved by including the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Minimum Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEMISTRY</td>
<td>14</td>
</tr>
<tr>
<td>Biology</td>
<td>12</td>
</tr>
<tr>
<td>Physics</td>
<td>8</td>
</tr>
<tr>
<td>English</td>
<td>12</td>
</tr>
</tbody>
</table>

The recommendation is for two semesters of general or inorganic chemistry (analytical chemistry may serve as part of this requirement) and a two-semester, complete course in organic chemistry.

Unless biology is chosen as the college major, additional electives in this field which may significantly duplicate courses given in medical school are less advantageous to the student than other electives.

This should include a complete course in physics. The student should register for the course which is commensurate with his mathematical background if more than one is available.

This must include at least one year of composition.
MATHEMATICS

This should include material through introductory calculus. Familiarity with
statistics and with the principles of computers is highly desirable. If advanced
mathematics has been completed through four years in high school, this col-
lege recommendation may be modified.

FOREIGN LANGUAGE

Although no college foreign language is required, this is considered a valu-
able elective. Also, it should be understood that this is required by the Col-
lege of Arts and Sciences of the University of Nebraska, as well as by most
other colleges, for the bachelor's degree. It is also required for the degree of
Doctor of Philosophy and should be anticipated by any student who is con-
sidering graduate work.

ELECTIVES

The student is urged to select courses from the general field of the humani-
ties and behavioral sciences and not to limit his training to the above
scientific subjects.

Credits offered from professional schools which do not regularly re-
ceive arts college credit are not accepted for premedical college require-
ments.

A student applying to the College of Medicine should have a grade
average of at least B in all the required science courses. The grade of B
is based upon the grading system of the University of Nebraska. The
equivalent in other grading systems will be determined by the Assistant
Registrar, College of Medicine, and the Committee on Admissions. In
determining the equivalent, the grading system and the scholarship re-
quirements of the college or university wherein the work was completed
will be taken into consideration.

REGISTRATION AND ADMISSION TO CLASSES

When an applicant receives notice that he has been accepted for en-
trance to the College of Medicine, he is required to send a deposit of
$25.00. This is applied as part payment of the tuition fee for the first
semester or is forfeited if the applicant fails to register in the class for
which he was accepted.

Students eligible for Veterans Administration benefits must submit
on day of registration a Certificate of Eligibility (VA 21E 1993), approved
for a program with the objective of Doctor of Medicine degree, indicating
the University of Nebraska College of Medicine as place of training.

Registration is accomplished on the day indicated in the official cal-
endar. A fee of $5.00 is charged any student who, unless excused by the
Dean, seeks to register later than this day. A fee of $5.00 is charged for
reregistration. Any change whatever in a registration once made is con-
sidered as a reregistration. No work done in the College of Medicine
may be credited without proper registration. No student may add any
subject to his schedule or drop from it any subject for which he has
been regularly registered except at specified times.

Class Standing and Promotion.—The standing of a student in any
course is determined by the instructors in charge of the subject, by ex-
aminations, by personal observation and by other methods of evaluation.

The grading system at the University of Nebraska College of Medicine
is as follows:

H—Honors Outstanding achievement, superior
P—Pass
F—Fail

The above letter grades do not have or require fixed numerical percentage
equivalents.
Any course which, for good reason, has not been completed, but in which progress has been satisfactory, may be reported as "incomplete." A student may not register for either the sophomore or the junior year with an existing incomplete still on his record. A senior student must remove any incomplete, acquired during the third year, by the middle of the senior year.

A student must attain a passing grade in all courses in any single year to be advanced to the next year.

A student in the first or second year of medical studies who fails only one course, if other course grades are satisfactory, may repeat that course in a summer school session provided the course for which he plans to register is approved by the department in which failure occurred.

Any student who fails more than one subject in any academic year may petition the Admissions Committee to be permitted to repeat the entire year or to repeat only those courses in which failure occurred.

Any student who is reported to be failing in half or more of the course hours of the academic year in which he or she is registered may be asked to withdraw, if in the judgment of the course instructors and of the Scholarship Evaluation Committee continuation would appear to be ill advised. Student discipline will remain unchanged.

A student who has failed twice here or elsewhere in the same subject is not eligible for registration at this college.

Comprehensive Examinations.—Students who are completing the sophomore year will be required to meet the following academic requirements:

1. A student who has obtained a passing grade (P) or better (H) at the end of the second year and a score of 75 or more on Part I of the National Board Examination will be considered to have met in full the scholastic requirements for promotion into the junior year.

2. A student who has scored less than 75 on Part I of the National Board Examination can be promoted into the junior year only after a decision by the Scholastic Evaluation Committee that the student is capable of performing satisfactorily during the junior and senior years and, in addition, can be reasonably expected to meet the requirement contained in #3 below. This decision by the Scholastic Evaluation Committee will be based upon an interview with the student, a full review of his academic record, and, where indicated, consultation with the faculty.

3. A student who has scored less than 75 on Part I of the National Board Examination and has thereby not provided all required evidence of successful mastery of the course material of the first two years, may be granted a temporary deferment of this requirement in accordance with #2 above. He will ordinarily be advised to repeat the examination when it is next offered and will remain under the scrutiny of the Scholastic Evaluation Committee until the examination has been successfully passed. Under extraordinary circumstances, the requirement of a score of 75 may be waived by the decision of the Scholastic Evaluation Committee.

Part of the evaluation of students completing the fourth or senior year is a comprehensive examination. The senior comprehensive is the National Board Part II Examination.

Student Discipline.—Student discipline will be handled by the Dean of the College of Medicine. A student who, by quality of work or conduct,
indicates an unfitness to enter the medical profession may be required at any time to withdraw from the medical college. Recommendations for suspensions, dismissals, or other suitable action as the case warrants, will be made to the faculty of the College of Medicine, the Chancellor, and the Board of Regents. The Dean may appoint a committee of the faculty to advise him on such matters.

**Absence or Withdrawal.**—Attendance at less than 80 per cent of the scheduled lectures and recitations or 85 per cent of the scheduled laboratory and clinical hours constitutes a failure in any course and shall be so reported.

The Dean of the College of Medicine is the adviser of all students in the College of Medicine. A leave of absence for a short time may be granted by the Dean. This is merely a justification for absence and not an excuse from any work. If a student in good and honorable standing finds it necessary to withdraw from the University before the close of a quarter, the Dean grants him permission to do so. If he is in good standing and is not a minor, he is given honorable dismissal from the University at his own request; if a minor, at the request of his parents or guardian.

**REQUIREMENTS FOR GRADUATION**

The degree of Doctor of Medicine is granted only under the following conditions:
1. The candidate must be at least 21 years of age;
2. He must possess a good moral reputation;
3. He must have complied with all the requirements for admission;
4. He must have pursued the study of medicine for at least three or four years and must have passed all required courses and examinations of the College of Medicine, University of Nebraska (the last two years work must have been taken at this institution);
5. He must have successfully passed examinations posed by the appropriate committees of the College of Medicine as outlined under the section on Comprehensive Examinations and have passed all departmental examinations;
6. He must have discharged all indebtedness to the University of Nebraska.

The executive faculty may select not more than five students from the top 10 per cent of the graduating class and recommend them for the degree of Doctor of Medicine with Distinction.

The executive faculty may also select not more than two students from the top 10 per cent of the graduating class who have shown outstanding scholarship or who have made an outstanding contribution to medical science and recommend them for the degree of Doctor of Medicine with High Distinction.

**Courses Leading to the Degrees of Bachelor of Arts or Bachelor of Science and Doctor of Medicine.**—Students who have transferred from the University of Nebraska College of Arts and Sciences may at the end of their fourth year earn the Bachelor of Arts degree or Bachelor of Science degree by:
1. Completing the group requirements of the College of Arts and Sciences;
2. Completing two minors or one major;
3. Using the subjects of the first year of the medical course as a major, all of which must be completed satisfactorily.
Both of these degrees are conferred by the College of Arts and Sciences at a Commencement on the Lincoln campus.

Candidates for baccalaureate degrees in institutions other than the University of Nebraska may arrange with their colleges to accept transcripts of the work of the first two years in medicine to apply to such degrees, or otherwise satisfy the requirements of those institutions.

Courses Leading to the Degree of Bachelor of Science in Medicine.—Only students presenting premedical college credits of high standard and who have satisfactorily completed all courses of the first two years in medicine, the last year of which shall be in residence in this institution, but who have not fulfilled the requirements for the degree of Bachelor of Science or Bachelor of Arts in the College of Arts and Sciences, may become candidates for the degree of Bachelor of Science in Medicine.

FEES AND EXPENSES*

All students who are legal residents of Nebraska and who carry a full student load will pay a single annual fee of $750. Nonresident students will be charged a single annual fee of $1600. Adjustments may be made in the case of students carrying less than the full student load. One-half of the tuition is due at registration, the balance on January 31.

The annual fee includes matriculation, registration, medical, laboratory, library, diploma, and course fees. In case of undue usage of materials or breakage or loss of equipment other than that allotted to each course, and because of negligence on the part of the student, a penalty charge will be levied based upon the fair value of the material and equipment so lost or broken.

Fee Refunds.—A student who withdraws from the University during any term for which he registered is entitled to claim a refund of a portion of his fees. A refund schedule is available at the Finance Office.

Miscellaneous Fees.—Candidates for a degree to be awarded at public exercises shall be present at such exercises, except as herein provided. A candidate must make application and show just cause in order to obtain the necessary faculty recommendation to receive a degree in absentia. Candidates to whom diplomas or certificates are awarded in absentia shall pay a special fee of $10. The following fees are not included in the schedule listed above:

<table>
<thead>
<tr>
<th>Fee Description</th>
<th>Fee Amount</th>
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<tbody>
<tr>
<td>Late registration</td>
<td>$5.00**</td>
</tr>
<tr>
<td>Transcript or certificate of graduation:</td>
<td></td>
</tr>
<tr>
<td>One copy of either furnished free</td>
<td>0.00</td>
</tr>
<tr>
<td>For each additional copy of either</td>
<td>1.00</td>
</tr>
<tr>
<td>Degree in absentia</td>
<td>10.00</td>
</tr>
<tr>
<td>Special examination, each course</td>
<td>5.00</td>
</tr>
<tr>
<td>Photostatic copy of diploma, 2 copies</td>
<td>1.00</td>
</tr>
<tr>
<td>Cap and gown rental fee—amount fluctuates</td>
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Expenses.—Board can be obtained in the vicinity of the College campus at a cost of approximately $25 to $30 a week and comfortable rooms for about $50 a month. Students rooming together can obtain comfortable rooming quarters at slightly less than this amount. One hundred seventy-

* Fees are subject to change.
** This charge is made to all students paying during the first week following the date the tuition installment falls due. An additional charge of $1.00 is made for each additional week after the first week of late registration.
five to $250 a year should be allowed for books and instruments. The average expense of a resident student for a school year, including board and room, books, instruments (exclusive of microscope and other special equipment), and all fees is about $3000.

**MISCELLANEOUS INFORMATION**

**Form of Payment.**—To avoid misunderstanding as to the amount charged for fees, checks on personal accounts will be received only when written for the exact amount of the fees. Parents or guardians should write checks for fees and for other expenses separately; if this is not done, students should deposit funds in a local bank and give personal checks for the amounts of the fees.

Remittance by mail should be by draft, money order, or cashier’s check. Do not send coin or money except by registered mail. It is impossible to trace money lost in the mail and University officials cannot be held responsible for such loss.

**Housing.**—Although the College of Medicine has no on-campus housing for medical students, the Assistant Registrar’s Office maintains listings of rooms, apartments, duplexes, and houses reported available.

**Nonresident Students.**—A student’s right to classification as a resident for purposes of registration in a state educational institution must be determined under the provisions of Nebraska Revised Statutes of 1943, Sec. 85-502 (R.S. Supp., 1965).

Each quarter, as students complete their registrations, they will be required to certify to the accuracy of the personal information asked for on the registration form, including their resident or nonresident status.

Usually a student is a nonresident if any of the following is true:

1. Their parents live in another state.
2. Their parents have resided in Nebraska and now have moved out of the state. (They and you become nonresidents even though property may still be owned in Nebraska.)
3. Their parents are in the Armed Forces from a home in another state, even though they may now be living in Nebraska.
4. The student has recently lived and been employed in another state although originally from Nebraska.
5. The student’s first enrollment in the University was as a nonresident. (Ordinarily it is not possible to become a Nebraska resident while attending the University or any other collegiate institution.)

Any student who has been classified as a nonresident who believes he can qualify as a resident should read the statute, which is set forth on the residency form (obtainable from the Registrar’s Office at the College of Medicine), fill out the form, and send or take it to the Director of Admissions, Administration Building 109 in Lincoln. A residency application form must be filed with him before the end of the ninth week of the term for which the tuition fee was charged. For the summer session, the deadline is the end of the third week.

**Microscopes.**—Students are required to provide suitable microscopes for their own use. Inquiries regarding specifications for microscopes as recommended by the faculty should be addressed to the Assistant Registrar, College of Medicine.
The School of Nursing, which is a part of the University of Nebraska Medical Center, offers three types of programs—the Baccalaureate, the Associate Degree, and the Master's Programs in Nursing.

Students seeking admission to the Baccalaureate Program in Nursing must complete the prerequisite courses at an accredited college or university. Students then transfer to the School of Nursing at the beginning of the summer session following their freshman year. The program of instruction for the remaining three years is provided by the faculty of the School of Nursing, the College of Medicine, and the University of Nebraska at Omaha. The program leads to a Bachelor of Science in Nursing. Graduates of the program are eligible to take examinations for licensure as Registered Nurses. Requests for bulletins and application blanks should be made to the Dean, School of Nursing, University of Nebraska Medical Center, Omaha.

Students seeking admission to the Associate Degree Program in Nursing are admitted upon graduation from high school. The length of the program is four semesters and one summer. The program of instruction is provided by the faculty of the School of Nursing, the University of Nebraska at Omaha, and the College of Medicine. The program leads to an Associate Degree in Nursing and graduates of the program are eligible to take examinations for licensure as Registered Nurses. Requests for bulletins and application forms should be made to the Dean, School of Nursing.

Students seeking admission to the Master's Program in Nursing should write to the Dean, Graduate College, University of Nebraska at Lincoln, to obtain applications for admission to the Graduate College. The Master's Programs in Medical-Surgical and Psychiatric Nursing are designed to prepare clinical specialists. Students desirous of preparation for teaching may elect to take a fourth semester. Information regarding these programs can be obtained by writing to the Dean, School of Nursing.

ALLIED HEALTH PROGRAMS

Several Allied Health Training and Educational Programs are carried out at the University of Nebraska Medical Center. These are:

- Baccalaureate Program in Medical Technology
- Training Courses for Radiologic Technologists
- Baccalaureate Program in Physical Therapy

Each provides the preparation for service in its field.

Students seeking admission must have completed the prerequisite courses described in the section of this catalog applying to that field. Required college courses may be taken at an accredited college or university.

Bulletins and application forms may be requested from the Registrar, University of Nebraska Medical Center.

GRADUATE WORK

Graduate course work in the field of the Medical Sciences is offered in thirteen departments: Anatomy, Biochemistry, Internal Medicine, Microbiology, Obstetrics and Gynecology, Otorhinolaryngology, Pathology, Pediatrics, Pharmacology, Physiology, Psychiatry, Radiology and Surgery. Four of these departments (Anatomy, Biochemistry, Microbiology, Physiology) offer independent majors leading to the master's de-
gree or to the Ph.D. degree. Three additional departments (Pathology, Psychiatry, and Radiology) offer independent majors leading to the master's degree only. The thirteen departments also cooperate in offering an interdepartmental area program which permits the student to pursue a course of study for the master's or the Ph.D. degree with concentration in the medical sciences rather than in a specific department.

The requirements for admission to an independent department are as follows: An applicant for admission for work leading to an advanced degree with specialization in a department of the pre-clinical medical sciences (Anatomy, Biochemistry, Microbiology, Pathology, Physiology and Radiology) must comply with the rules governing admission to the Graduate College, and also with any specialized rules governing admission for study in the department in which he expects to major. In general the applicant will, therefore, need to present a Bachelor of Science or a Bachelor of Arts degree from a recognized college or university including undergraduate preparation constituting an acceptable major in the department in which he expects to carry his work.

Admission to graduate work in the Interdepartmental Area of Medical Sciences, leading to the Master of Science or Doctor of Philosophy degrees, may be granted to students from either of the following categories:

1. Students with a baccalaureate degree from a recognized college or university, including a pre-medical background appropriate to the planned program in the Medical Sciences Area.

Students entering the Medical Sciences program on this basis will be required to have already completed, or to include in their graduate programs, regular medical college course material in at least three of the following subjects: (1) anatomy, (2) biochemistry, (3) physiology, (4) microbiology, (5) pathology, (6) pharmacology, and (7) radiology. Such subjects are to be recorded upon admission to candidacy and included in the comprehensive examination.

2. Students with a degree of Doctor of Medicine with an acceptable record. Students with an M.D. degree will not be permitted to receive graduate college credit for repetition of a course covered in the M.D. program.

As a prerequisite to admission for work leading to the degree of Master in Psychiatric Occupational Therapy, a student must have been graduated from an accredited school of occupational therapy and hold a bachelor's degree from a school or college of recognized standing. Acceptable evidence will also need to be submitted on the student's personal qualifications for psychiatric occupational therapy.

A student registering for graduate work in the medical sciences must comply with the general requirements of the Graduate College and with any special rules established by the graduate committee of his major department, or if the major is in medical sciences, by the interdepartmental area committee. Certain special rules which are applicable to all students in the medical sciences regardless of the major are set forth in the paragraphs which follow. Other rules which pertain to the work in specific departments or in the interdepartmental area are indicated under the headings designating the respective departments.

Graduate students who are admitted with deficiencies in the medical sciences may, by permission of the appropriate graduate or area committee and approval of the Dean of the Medical College, register for courses on the College of Medicine campus in preparation for their qualifying examinations. Such graduate students may, upon the passing of
qualifying examinations, apply to the appropriate graduate or area committee for graduate credit in certain medical courses successfully completed. The graduate or area committee may recommend such credit on the basis of the attainment and aptitude of the applicant. In any case, at least one-half of the total credit for the master's degree shall be taken in graduate courses listed as 350 and above. Medical courses for which partial or total graduate credit may be allowed are listed under the respective departmental headings in the sections which follow.

Graduate students may be required to attain proficiency in their field of concentration by participating in the instruction of medical students for at least one quarter in a regularly required course in the College of Medicine. A student who fails to earn an average grade of at least B may not continue his program of study without the special permission of the appropriate graduate or area committee.

A student who wishes to become a candidate for an advanced degree with concentration in the medical sciences must select work in the departments which have been approved to offer graduate work. He may elect to do his thesis research in any one of the thirteen cooperating departments. The distribution of graduate work shall be such that not more than two-thirds of the total program, including thesis research, shall be in the major field of study, with a remainder in at least one other department for candidates for the master's degree, and two other departments for candidates for the degree of Doctor of Philosophy.

Candidates who select one of the preclinical departments for their thesis research may come from any of the two categories (for admission) listed on page 35. They may select other departments for additional work.

Candidates who select one of the clinical departments for their thesis research must select preclinical departments for additional work. Such students may be required to serve as residents for one year before being admitted to the Graduate College. While fulfilling their minor (preclinical) requirements, these candidates must be assigned to the minor department or departments during at least one-third of the total hour requirement for the degree sought.

GRADUATE FEES

All students who are legal residents of the State of Nebraska will pay $13.00 per quarter hour up to a maximum of $156.00 (12 hours). Nonresident students will pay $27.00 per quarter hour up to a maximum of $324.00 (12 hours). There is no additional charge for over 12 hours per quarter. The single fee includes—in addition to course charges—registration, library, diploma, and Student Health fees. For additional miscellaneous fees, consult the Bulletin of the Graduate College.

A change-of-registration fee of $5.00 is charged in addition to the regular tuition for any changes made from the original registration.

For thesis publication and binding fees, consult the Librarian of the College of Medicine before starting thesis.

Teaching and Research Assistantships.—A graduate student is required to pay resident tuition and fees for any quarter during which he holds an appointment as a teaching or research assistant. If the stipend received by an assistant for three quarters is equal to at least the maximum fee for four quarters ($1,248.00) he will pay only the required special fee for a summer quarter following, or intervening between, quarters for which he is appointed, even though he does not hold an appointment for the summer quarter.
Graduate Fellowships.—A student must carry a full program of graduate study or research for each quarter during which the fellowship stipend is received.

Financial Aid.—Graduate students in need of financial assistance should contact the Office of Scholarships and Financial Aids, Room 324 Conkling Hall on the Medical Center campus.

GRADUATE REGISTRATION

Registration will be accomplished during the early part of each quarter in consultation with the chairmen of the different departments in which the graduate work will be carried on.

UNIVERSITY STAFF EXEMPTION

Members of the academic-administrative staff employed full time may be permitted to register for not more than 6 credit hours per quarter in not more than two courses, for which the charge is $1.00 plus a $5.00 matriculation fee. All such registrations must carry the signed approval of the chairman of the department and the dean or director of the college, school, or division in which the staff member is employed during the period for which he is registered.

Academic-administrative staff members of the University employed by the Nebraska Psychiatric Institute are eligible for this staff exemption.

CONTINUING EDUCATION

Continuing education is offered through a variety of approaches to practicing physicians, nurses, and people in allied health professions. Approximately twenty on-campus courses are offered each year by the University of Nebraska Medical Center. On-campus education of an intensive nature is available to practitioners through clinical traineeships in certain aspects of medicine through participation in hospital work and an organized plan of study. Continuing education is brought to health workers in their own hospitals through circuit courses and a program of two-way amplified telephone conferences involving the University of Nebraska Medical Center faculty and out-state participating hospitals. Through the Dial-A-Tape Library, recordings on medical diagnosis and current therapy are available by telephone to physicians and allied health professionals of the state.

FINANCIAL ASSISTANCE

The primary function of financial aid programs at the University of Nebraska Medical Center is to provide financial assistance to students who, without such aid, would be unable to enter or continue their higher education. Financial assistance consists of scholarships, grants, fellowships, and loans administered by this institution. Other sources of financial aid are available from outside sources.

Academic excellence, financial need, or both are the basic criteria used in selecting recipients of aid. The family of a student is expected to make maximum effort in providing assistance. Financial aid through this institution and other sources should be viewed as supplementary to those efforts.

Most sources of financial assistance available to medical students are listed below. The sources described are by no means the only forms of aid available. Public and private organizations throughout the country
are involved in aiding students. Information on those other sources may be available at your school or public library. More specific information on each of the programs listed below is available in the Office of Scholarships and Financial Aids, Room 324 Conkling Hall.

**Application Procedure.**—Financial assistance programs administered by this institution require annual application. Those programs are combined into one application form. Applicants need not apply for a specific scholarship or award as each applicant is evaluated in terms of his eligibility for all forms of financial assistance.

All annual applications in which financial need is a consideration requires the applicant to also file a “Graduate and Professional Student’s Financial Statement” with College Scholarship Service.

Applications and financial statements can be obtained after March 15th from the Office of Scholarships and Financial Aids and should be filed by May 1st. Applications received after that date will be considered.

Applications or information for other sources of financial aid listed below are also available in the Office of Scholarships and Financial Aids. Normally, there are no specific deadlines for most of those applications.

**UNIVERSITY OF NEBRASKA AND UNIVERSITY OF NEBRASKA FOUNDATION SCHOLARSHIPS.**

There are a number of scholarships which are available to students of the College of Medicine. Some were established by the University Board of Regents and others made available by organizations and individuals. The conditions governing these scholarships vary as do the numbers and amounts. Generally, awards are made on the basis of academic excellence, financial need, other restrictions, or a combination of those considerations. Selections are on recommendation of the Committee for Scholarships and Financial Aids, with approval of the Dean, or in some instances by special committee. Annual application is required. A listing of these scholarships with a brief description of each is available from the Office of Scholarships and Financial Aids.

**UNIVERSITY OF NEBRASKA AND UNIVERSITY OF NEBRASKA FOUNDATION LOANS.**

A number of student loan funds are available to the College of Medicine. These funds are in the custody of the Board of Regents and the University of Nebraska Foundation and were established through contributions by organizations and individuals. The conditions governing the funds differ; however, a student with financial need can usually qualify for a loan from one or more funds. Although some other eligibility criteria may prevail for specific funds, the student must be enrolled or accepted for enrollment and must demonstrate financial need. Normally, not more than $1,500 may be borrowed each academic year. Some funds are restricted to lower maximums. Applications may be filed at any time during the school year and must be made through personal interview at the Office of Scholarships and Financial Aids.

**HEALTH PROFESSIONS STUDENT ASSISTANCE PROGRAM.**

A federally sponsored program established by the Public Health Service Act of 1963 to aid students who need financial assistance to pursue a course of study leading to a degree of Doctor of Medicine. The goal is to increase educational opportunities by providing long-term, low interest loans and grants to students who are in need of such assistance. Health
Professions loans and grants are made to students with the lowest family income.

An applicant must be a citizen or national of the U.S. or intend to become a permanent resident and must be enrolled or accepted for enrollment on a full-time basis. Grants may not exceed $2,500 per academic year. Loans can be made up to $2,500 for a nine-month academic year and proportionately increased for twelve months. Assistance may be provided in the form of a loan, grant, or a combination of both. Amount of assistance may not exceed the maximums indicated or the financial need whichever is the lesser. Annual application is required and a “Graduate and Professional Student’s Financial Statement” must be filed.

A special Health Professions Program exists for Cuban refugees. Contact the Office of Scholarships and Financial Aids for more information.

OTHER SCHOLARSHIPS.

Several other scholarships as listed below are made available to medical students. The funds for these are not administered by this institution, but the selection of recipients rests with the College of Medicine. Application procedures follow those above unless indicated otherwise.

**Alpha Kappa Kappa Alumni Association Scholarship.**—An annual grant of $200 is awarded to a scholastically worthy and deserving student who is recommended by the Dean and approved by the Loan Committee of the Nebraska Medical Education Fund, Inc.

**Nu Sigma Nu Alumni Association Scholarship.**—An annual grant of $100 is awarded to a deserving student who is recommended by the Dean and approved by the Loan Committee of the Nebraska Medical Education Fund, Inc.

**Faculty Woman’s Club Scholarship.**—One or more awards made annually to women medical students on the basis of scholarship or financial need. Selections made by recommendation of the Committee for Scholarships and Financial Aids with approval of the Dean.

**Pfizer Laboratories Medical Scholarship.**—The Pfizer Laboratories Division of Pfizer, Inc., for the past several years has made a scholarship available annually in the interest of furthering medical education. More recently, a $1,000 award, made on the basis of scholastic record, financial need, or both as determined by the Dean or Awards Committee.

**New York Life Scholarship.**—The University of Nebraska College of Medicine is one of eleven four-year medical schools selected under a scholarship program established and financed by the New York Life Insurance Company. The primary purpose is to assist young men and women of ability who would otherwise have serious financial problems attending medical school. Each of the participating schools selects a qualified candidate in the incoming first-year class as the New York Life Medical Scholar. For renewal, the scholar’s performance is reviewed by his medical school. The student is expected to rank in the upper one-half of his class. The amount of each annual scholarship is intended to cover tuition, room, board, fees, books, and equipment as stated in a budget submitted by the Dean for approval before each academic year. Only citizens of the U.S. or Canada are eligible for this scholarship. Selection is solely the responsibility of the medical school. Inquiries should be addressed to the Chairman, Scholarships and Financial Aids Committee, who will present names of applicants to the Dean.
Ethel Booth Trust Fund.—A fund established by the will of Miss Ethel Booth, former professor of English at Nebraska Wesleyan. The fund is to assist young Nebraska men and women who have given evidence of scholarship, have financial need, and who give indication of practicing in Nebraska as a general practitioner. Assistance may apply toward total academic and subsistence expenses for medical school. Inquiries should be made to the Chairman, Scholarships and Financial Aids Committee. Selections are based on recommendation of that committee with final approval of the trustee of the fund through personal interview.

OTHER LOAN PROGRAMS.

Students of the College of Medicine, in addition to the above programs, may qualify for loans from other programs as listed below. While the funds are not administered by this institution, applications are in most instances processed through the Office of Scholarships and Financial Aids. Forms are available from that office, the participating financial institutions, or sponsoring organizations.

Federal Guaranteed Loan Program.—This program, sponsored by the U.S. Office of Education, enables students to borrow money directly from a savings and loan association, credit union, bank, or other lending institution participating in this program. Arrangements for the loan are made directly between the student and the lender.

The student must be a citizen of the U.S. and must be enrolled or accepted for enrollment. Up to $1,500 may be borrowed for a nine-month academic year and $2,000 if attending school for twelve months. Students who come from a family with adjusted gross income of less than $15,000 per year pay no interest while attending school.

Forms are available from this institution and may be available from the lender.

A special program exists for black medical students. For more information contact: National Medical Association, 1717 Massachusetts Avenue, Northwest, Washington, D.C. 20026.

The American Medical Association Education and Research Foundation Student Loan Guarantee Fund (AMA-ERF).—This program was established for medical students in full-time training who lack sufficient credit for the usual local personal bank loan. AMA-ERF has made arrangements with selected banks to guarantee loans to needy medical students.

All medical students, interns, and residents in good standing who are U.S. citizens may use this plan. Medical students must have completed their first quarter of medical school to qualify. Applicants are eligible for loans up to $1,500 a year up to a maximum of $10,000 over a seven-year period.

Forms are available from this institution. Medical students should not submit applications more than once each academic quarter.

Nebraska Medical Foundation Guarantee Loan Program.—A guaranteed loan program established in 1964 by agreement between the Nebraska Medical Association and the First National Bank and Trust Company of Lincoln, Lincoln, Nebraska. This program is similar to the AMA-ERF to aid medical students from the State of Nebraska in need of financial assistance.

Loans are limited to students who are full time, in good standing, and whose parents live in Nebraska, qualifying them as Nebraska resi-
dents. Applications are considered only when need of funds is demonstrated. The maximum amount that can be borrowed in a twelve-month period from September 1 to August 31 is $1,500.

Forms are available from this institution. More than one application may be processed to borrow up to the $1,500 maximum but applications should not be submitted more than once each academic quarter.

**Nebraska Medical Education Fund, Inc.**—A group of local physicians and alumni of the University of Nebraska College of Medicine established a loan fund to assist medical, nursing, and allied health professions students.

Students must be enrolled on a full-time basis and must have completed their freshman year of training. Students must be worthy of and in need of financial assistance on an emergency basis. Medical students may borrow up to $1,500 per academic year.

Forms are available from this institution. They can be processed at any time during the academic year and should be processed through the Office of Scholarships and Financial Aids.

**Student American Medical Association Foundation.**—A loan program which began in 1968 and is operated by SAMA. Loans are made from the Lea-Staudacher Student Loan Fund established through contributions by Lea, Inc., of Ambler, Pennsylvania, in memory of their founder.

Loans are made available for amounts up to $250 at no interest for a period of six months. These loans are for medical students for any purpose the student desires. Loans under this program are available all year round and are limited only by the amount that is available to the foundation fund. Application forms are available from this institution.

**American Medical Women’s Association, Inc.**—Women who are U.S. citizens are eligible for this program. Loans may be available up to $500. There are no deadlines for application. For more information contact: American Medical Women’s Association, Inc., 1740 Broadway, New York, New York 10019.

**FELLOWSHIPS.**

There are a limited number of medical student fellowships from various sources including federal agencies, industry, and national as well as local health associations. These are designed to provide summer or part-time employment which includes research. Application for fellowships should be made to the chairman of the department in which the student wishes to work.

**OTHER FINANCIAL ASSISTANCE.**

**National Medical Fellowships, Inc.**—A financial assistance program limited to students from minority groups, specifically American Blacks, American Indians, Mexican Americans, and Puerto Ricans, with priority given to students entering the first year of medical school. Grants are made on the basis of financial need.

Inquiries concerning this program must be made by students directly to: National Medical Fellowships, Inc., 3935 Elm Street, Downers Grove, Illinois 60515.

**Social Security Benefits.**—A 1965 change in the Social Security Act extended the age limit for children’s benefits from 18 to 22 years of age for full-time students who are unmarried. Students may be eligible for monthly benefits when a parent on whom they were dependent dies or starts receiving retirement or disability benefits. More information can be obtained from the nearest Social Security Administration office.
Veterans Benefits.—The Veterans Readjustment Act of 1966 provides benefits to certain veterans who served on active duty after January 31, 1955. Also, children of deceased or disabled veterans may be eligible for benefits to age 22 while full-time students. Further information can be obtained from the Veterans Administration.

Nebraska Rural Rehabilitation Corporation Scholarship Fund.—This program offers financial assistance to Nebraska farm and ranch youth who need financial assistance to continue their education beyond high school. Students who wish to attend or are attending any governmentally operated school beyond the high-school level may apply for this assistance provided they are from farms or ranches in Nebraska. A student interested in the program may apply for this assistance at any stage in his education from the senior year in high school on. Recipients are limited to a total of $2,400 during their educational careers. Forms can be obtained from the Nebraska Department of Agriculture, State Capitol Building, Lincoln, Nebraska 68509, or from county or state Farmers’ Home Administration offices.

MISCELLANEOUS

Many other organizations aid students with scholarships and low-cost loans. They include Parent-Teacher Associations, community scholarship funds, employers, unions, churches, civic and fraternal groups, professional organizations, and industrial associations. Students are urged to check into such awards offered in their own locality. Also, many states sponsor scholarships, grants, and loan programs. Nonresident students are encouraged to check with their State Department of Education for more information.

STUDENT AND ALUMNI ORGANIZATIONS

Student Activities Council.—The Student Activities Council governs the organization and regulation of student activities of the College of Medicine and School of Nursing. It serves as an agency through which faculty relationships with student activity can be fostered and maintained. Recognized student groups elect members who serve as representatives in the Student Activities Council.

Alumni Association.—Alumni of the University of Nebraska College of Medicine maintain an active organization with headquarters in Omaha, at the college. Activities include sponsorship of class reunions, luncheons, dinners and the traditional senior reception following Commencement each year. A news bulletin is sent to members every two months.

Alpha Omega Alpha.—A.O.A. is a nonsecret medical college honorary society, membership in which is based upon scholarship and moral qualifications.

Elections are limited to those whose scholastic record places them in the upper 25 per cent of their class, but the total number of members shall not exceed one-sixth of the total number expected to graduate. Not more than one-third of the membership may be elected during the junior year. Juniors must be elected by a unanimous vote, seniors by a majority vote. The University of Nebraska Chapter was organized November 2, 1914.

Student American Medical Association.—Founded in 1950 with the aid of a grant from the AMA, the Student American Medical Association swiftly grew to its present membership of over twenty thousand students, representing more than seventy medical schools. Serving expressly
to advance the profession of medicine, to contribute to the welfare and education of medical students, to familiarize its members with the purposes and ideals of organized medicine, and to prepare its members to meet the social, moral, and ethical obligations of the medical profession,” SAMA offers group insurance plans, an internship evaluation program, and a monthly journal. Plans for the immediate future include low-interest student loans, new scholarships, and a job placement service.

At Nebraska SAMA sponsors a series of convocations held regularly throughout the school year. Membership closely approaches 100 per cent of the student body.

**CLINICAL FACILITIES**

**University Hospital.**—The University Hospital is the central and largest unit of the group of buildings comprising the Medical Center. University Hospital has 265 beds and 46 bassinets. The Medical Center also contains 95 beds at the Nebraska Psychiatric Institute, and an additional 44 beds at the Hattie B. Munroe Pavilion, and extended care facility for children. University Hospital features three intensive care units, a Neonatorium for the special care of newborns, the Eppley Radiation Center, and other specialized patient care facilities, all of which utilize the most modern equipment.

University Hospital operates extensive outpatient services in the north wing of the University Hospital building. Among the sixty clinics are Internal Medicine, Surgery, Pediatrics, Obstetrics and Gynecology, and all of their subspecialty services. In addition, the Departments of Ophthalmology, Otorhinolaryngology, Dermatology, Orthopedic Surgery, Physical Medicine and Rehabilitation, Neurology, Urology, and Family Practice operate outpatient clinics. A modern emergency service suite is also a part of the complete outpatient services available at University Hospital. Psychiatry clinics are operated at the University Hospital and the Nebraska Psychiatric Institute.

The C. Louis Meyer Childrens Rehabilitation Institute, also located on the Medical Center Campus on 44th Street, provides specialized diagnostic and rehabilitative services for the handicapped child. University Hospital operates an outreach clinic in South Omaha at 3018 “W” Street.

The main entrance to the University Hospital is on 44th Street facing west. The hospital administrative offices are on level 4 on the 42nd Street side of the hospital building.

The control of the University Hospital is vested in the Board of Regents of the University and exercised through the President of the Medical Center.

**AFFILIATED HOSPITALS**

Bishop Clarkson Memorial, Immanuel, Methodist, Douglas County, and Veterans Administration hospitals in Omaha, provide over 1,600 additional beds which are available for student education. Members of the College of Medicine faculty are on the staffs of all these hospitals. In addition to this, the College of Medicine has recently affiliated its educational programs with Childrens Memorial Hospital in Omaha and the Orthopedic Hospital in Lincoln, Nebraska.

**POSTGRADUATE PROGRAMS**

Graduates of the College of Medicine are offered a wide selection of internships and residencies in the University and affiliated hospitals. The
graduating student may enter certain residency programs upon graduation, or may elect either a straight or rotating internship. There are forty first-year and over 150 total such positions available. These programs are integrated with the affiliated community hospitals to provide great flexibility in graduate education.

LABORATORY FACILITIES

Anatomy.—The Department of Anatomy occupies space in the lower two levels of the Basic Science Building. This location provides entirely new and updated laboratory and classroom facilities. The teaching materials and audiovisual aids have been thoroughly revised and brought up to modern standards.

Biochemistry.—The Biochemistry Department is located on levels three and four of South Building. Both levels house the departmental offices, research laboratories, and special supporting facilities such as instrument rooms, cold and constant temperature rooms, and storage areas.

Medical Microbiology.—This department occupies space on the second, third, and fourth levels of the new Basic Science Building and shares student laboratory facilities with the Departments of Anatomy and Pathology. There are excellent facilities for support of the teaching exercises and for support of the active research and graduate programs carried out by the faculty of the department. The diagnostic microbiology laboratory is located in the University of Nebraska Hospital and clinics. This laboratory provides material useful in class teaching exercises. Extensive collections of slides, specimens, charts, cultures, and other educational material are available.

Pathology.—The offices and classroom areas are located on the first and second floors of the new Basic Science Building. The student laboratories are also utilized by Microbiology and Anatomy. Special equipment, loan sets of slides and other materials, with the exception of microscopes, are provided for the student by the department. Approximately 9,000 colored lantern slides and numerous electron microscopy photographs are used for the teaching exercises. The laboratories of the Department of Pathology in the University Hospital provide additional materials and case findings which support the teaching program.

Physiology.—The department occupies the fourth, fifth, and sixth levels of the South Laboratory Building. The teaching area for courses in medical physiology and biophysics is located on the fourth level. A lecture and demonstration amphitheater, with sound projection, seats a class of 108. A mammalian laboratory accommodates up to fifty students with surgical tables and recording equipment for eight to ten groups. Research laboratories for staff and graduate students are available on all three floors. Supporting facilities include animal quarters, a surgical suite with sterilization equipment, cold room, photographic dark rooms, radioisotope laboratory, departmental library-seminar room, and a shop equipped to fabricate in wood, plastic, metal, and glass. The research area is wired to the computer center for direct experimental data processing and experimental control.

Museum.—The pathological museum of the College of Medicine contains about 3,500 specimens. Nearly every variety of pathological lesion is represented and the constant addition of fresh material from the autopsies performed continually adds to its interest. In addition to the gross specimens are thousands of microscopic sections and a large col-
lection of wax reproductions of various lesions. The museum is an impor-
tant and necessary adjunct to the teaching of pathology and of clinical

Clinical Pathology.—Classes in clinical pathology are held in the new
Basic Science Building, utilizing the same student laboratory facilities
as those used by Microbiology, General Pathology, and Anatomy. A com-
prehensive hematology loan set is issued to each pair of students for
their study throughout the course. Collections of teaching materials
including photomicrographs, microscopic slide sets, and other laboratory
equipment are provided for the students. Microscopes are to be supplied
by the student. Demonstration materials are available in the student
laboratory and in the University Hospital Laboratories. Audiovisual and
other teaching material is made available to the students from the Uni-
versity Hospital Clinical Laboratories.

LIBRARY FACILITIES

The University of Nebraska Medical Center Library is one of the major
biomedical resource libraries in the country. It is housed in the new
71,000 square foot Library of Medicine which is situated above the Basic
Science Building, a location which gives geographic force to the concept
of the library as a catalyzing agent for all activities on the campus. The
collection includes more than 160,000 volumes. The library subscribes to
more than 2,000 journal titles, and maintains complete back files of all
the important journals in the fields of clinical medicine and basic sciences
in both English and foreign languages. The library seats 330 readers in a
variety of individual study desks and other seating arrangements.

This library incorporates the most sophisticated techniques of informa-
tion storage, retrieval, and dissemination and anticipates some of the
techniques expected to evolve in the future. The National Library of
Medicine has named the University of Nebraska Medical Center as the
management headquarters for the Midcontinental Regional Medical Li-
brary service which means that this library is part of a national network
to facilitate the transfer of biomedical information. Students of the Col-
lege of Medicine, therefore, have access to one of the most complete
medical libraries in the Midwest. It also offers an unlimited opportunity
for research and additional reading and study through the national net-
work.

A competent staff of librarians is available for consultation and informa-
tion regarding the methodology of literature searching and information
retrieval.

In addition to its regular function, the library maintains a collection
of material on the history of medicine in Nebraska and information on
graduates of the college and activities of the faculty. It keeps complete
files of reprints of writing by the staff members. Incorporated within the
library are 2,000 volumes of the Omaha-Douglas County Medical Society,
periodic transactions of the Nebraska State Medical Association, and
several outstanding medical libraries of former practitioners of the state.

CURRICULUM 1971-1972

The curriculum of the University of Nebraska College of Medicine is
undergoing adjustments in emphasis, focus, and distribution of time de-
voted to the areas involved in medical sciences. Some coordinated inter-
departmental courses have been introduced and others are being devel-
oped for incorporation in 1971. Alterations in the curriculum are designed to serve the varied interests and professional goals of students. Course units are recorded in terms of quarter hour credits. Since departmental commitments are incorporated in coordinated units, the organizational outline of the curriculum for 1971-1972 is presented:

**YEAR I**
Science basic to medicine, reproductive and developmental science, and the skills of clinical data-gathering provide the initial step.

**CELL BIOLOGY**
- Structure—anatomy, genetics, hematology, pathology
- Function—biochemistry, physiology, genetics

**SYSTEM BIOLOGY**
- Organization—anatomy, clinical science departments
- Function—physiology, biochemistry, neuroscience. Systems involved include cardiovascular, renal, respiratory, gastrointestinal, endocrinologic, reproductive, and neurosystem.

**REPRODUCTIVE AND DEVELOPMENTAL SCIENCE**
Coordinated course projected in units to extend through two years: embryology, psychiatry, obstetrics, pediatrics, genetics, contributing primarily. Biology of reproduction and growth together with mental and emotional growth of the individual in society.

**CLINICAL SCIENCE TECHNICS**
Introduces features of clinical data gathering including obtaining histories and physical examination information in a clinical setting.

**YEAR II**

**CELL BIOLOGY**
In terms of microbiology and immunology and pharmacology, in which microbiology, genetics, biochemistry, pharmacology, and pathology participate.

**SYSTEMS DISEASE**
A coordinated consideration of the systems arranged in quarter units in which basic and clinical science departments participate throughout the year.

**PUBLIC HEALTH AND COMMUNITY MEDICINE**
Epidemiology, biostatistics, health care systems, and a family health-social survey.

**REPRODUCTIVE AND DEVELOPMENTAL SCIENCE**
Continues in units examining abnormalities and changes encountered in stages of life from birth to senescence.

**CLINICAL SCIENCE**
Involves special technics of evaluation and examination as well as the approach to solving the problems presented by patients.

**YEAR III**

**PRIMARY HOSPITAL CLERKSHIPS—8 weeks each (32 weeks)**
- Internal medicine
- Obstetrics-gynecology
- Pediatrics
- Surgery

**ELECTIVES—16 weeks**

**VACATION**—Optional, total of 12 weeks allowed during years III and IV
A required primary clerkship in Psychiatry (8 weeks) and in Neuroscience (4 weeks) can be scheduled during the third or fourth year.

**CLINICAL SCIENCE SERIES**—A continuous series of lectures and demonstrations organized in subject areas by interdepartmental faculty committees. Designed to provide the background in clinical science deemed basic for every physician irrespective of his career. All traditional clinical departments plus Pathology, Physical Medicine and Rehabilitation, and Radiology participate in this series.

**YEAR IV**

**CLERKSHIP IN AMBULATORY MEDICINE, INTERNAL MEDICINE—8 weeks**

**COMMUNITY PRECEPTORSHIP—4 weeks**

**ELECTIVES—32 weeks**
Elective opportunities are offered in 4-, 8-, and 12-week units by all departments and divisions of the College of Medicine. The student is able to select a program with faculty counsel that most effectively supports his interests and career goals. Practical limits on each elective assure a favorable ratio between students and faculty so that learning will be optimal. Medical Genetics, Jurisprudence, and Forensic Pathology are whole-class courses.

**PHYSICIAN'S AUGMENTATION PROGRAM**

The augmentation section is designed to be completed in three full academic years or 128-144 weeks of instruction. This section takes or shares the pre-clinical science courses deemed common to the background of every physician. Early, graduated involvement in clinical science occurs simultaneously with pre-clinical science subjects. The realignment of curriculum has led to the development of new courses and a different coordination of courses from the sequence of the usual curriculum.

**QUARTERS 1, 2**
Focus on cell biology, behavioral science, and basic clinical science technics.

**QUARTERS 3, 4, 5**
Emphasizes systems biology, reproductive biology, and disease together with clinical science in a hospital setting, an ambulatory setting, and in psychiatry.

**QUARTERS 6, 7, 8**
These are devoted to periods in community medicine, selected pre-clinical science, and to primary clerkships in clinical sciences—medicine, obstetrics, pediatrics, neuroscience, surgery.

**QUARTERS 9, 10, 11, 12**
These are occupied by elective courses selected from the courses developed by all departments to foster the career interests of the students.
(Twelve weeks of vacation are optional for this program during quarters six through 12.)

**POSTDOCTORAL MEDICAL EDUCATION**

Medical education is recognized as a continuing process that begins in medical school and continues through the professional life of the physician. Currently, postdoctoral education begins with the internship which, year by year, is becoming more difficult to differentiate from the last years of medical school. From here, there are multiple pathways for many possible career choices in medicine. Each intern and each resident will be registered for the appropriate course for each academic year of his internship or residency at the University Hospital.

Internships are either general or specific. Residency programs are available in Anesthesiology, Child Psychiatry, Family Practice, Internal Medicine, Neurology, Obstetrics and Gynecology, Ophthalmology, Oral Surgery, Orthopedic Surgery, Otorhinolaryngology, Pathology, Pediatrics, Pedodontics, Psychiatry, Radiology, Surgery and Urology.
Courses of Instruction

In the following departments, courses numbered 310-319 are given in the first medical year; courses numbered 320-329, in the second medical year; courses numbered 330-339, in the third medical year; courses numbered 340-349, in the fourth medical year. Courses numbered 350 carry graduate credit. Roman I indicates courses offered the fall quarter; II, the winter quarter; III, the spring quarter; and SS, the summer.

Anatomy

Professors Holyoke, Chairman, Hard, Vice Chairman, Benjamin, Emeritus, Elliot, Emeritus, Friedlander, Latta, Emeritus, Meader, Rigby, Skultety; Associate Professors Bach, Earle, Gardner, Severn; Assistant Professors Amato, Cochran, Feleppa, Reynolds, Shervey, Stinson; Instructor Effont; Assistant Instructor Landers.

In this department instruction is given in all phases of human morphology including gross, microscopic, and ultrastructural. Developmental phases of anatomy are covered in conjunction with the related clinical Departments of Pediatrics and Obstetrics.

Every effort is made to correlate the teaching with related basic and clinical fields in order to establish the relevance of morphological studies to the solving of problems of clinical medicine. The basic courses are established as core courses presenting fundamentals of universal importance. Opportunity is provided for additional study in depth through a selection of elective courses.

ANATOMY.—04

310. Gross Anatomy (9 q h graduate cr) Staff
This course covers the dissection of the entire body. The work is carried out in groups of four to six, each group being assigned to a separate table. The greater part of the instruction is given in the laboratory in small groups. The laboratory procedure is presented in a series of video tapes presented at the beginning of laboratory periods and the material is covered at the end of each period through correlation conferences in which the various related departments participate.

311. Histology (8 q h graduate cr) Staff
A detailed study of the histology and histogenesis of the fundamental tissues and organ systems is carried out with lectures emphasizing important points and phases which require special explanation.

312. Neuroanatomy—Neurophysiology (Physiology 311 and Interdepartmental 314) (7 q h graduate cr II) Staff
An interdepartmental course taught conjointly by staff from the Departments of Anatomy and of Physiology and Biophysics. The structure and function of the peripheral, autonomic and central nervous systems, with clinical correlations.

ELECTIVES.—

Note. Prerequisite for all elective courses is permission.

341. Special Studies in Anatomy Staff
Students are offered the opportunity to pursue studies in the various fields indicated in depth beyond that given in the basic courses. The work will consist of lectures, demonstrations, assigned readings and laboratory work, depending on the nature of the material and the hours of registration. Full credit indicated can be achieved by re-registration in a course should a student elect to do so. Students should contact the Chairman of the Department for information relative to arranging for any of these courses.

A. Electronmicroscopy—Spring quarter
B. Histochemistry—Spring quarter
C. Cytogenetics—Spring quarter
D. Teratology—Spring quarter
E. Embryology—Spring quarter
F. Neuroanatomy—Spring quarter

342. A, B, C, D, Applied Anatomy (1-5 q h cr) Holyoke, Staff
Demonstrations, dissections, and lectures covering the gross, topographical, and surgical aspects of human anatomy. Special emphasis will be placed on clinical applications.

A. Extremities
B. Thorax and Abdomen
C. Topographic Anatomy
D. Pelvis and Perineum
349. Research in Anatomy Staff
   Prereq. Arrangement with departmental staff.
   Work can be carried out in any of the subdivisions of Anatomy.

GRADUATE COURSES

313. Human Embryology (4-6 q h cr) Severn

350. Special Topics in Anatomy (1-3 q h cr per q, max 12) Staff
   Prereq. Permission.
   A systematic coverage of the current problems, techniques and literature
   pertaining to the major subdivisions of the field of anatomy. Gross anatomy, histology,
   embryology, and neuroanatomy. These will be taken in rotation through
   the department.

352. Fundamentals of Histochemistry (4 q h cr III) Shervey
   Prereq. Anat 311, Biochem 310
   Development of the basic concepts and methods for identification of lipids,
   carbohydrates, proteins, enzymes, and inorganic compounds in tissue sections.

353. Advanced Hematology (Pathology 365, Internal Medicine 356) (2-3 q h cr per q, total 6) Rigby

354. Advanced Human Embryology (4 q h cr) Severn
   Prereq. Anat 350
   An examination of our present knowledge of human morphogenesis based on
   an analysis of various developing organ systems and their sequential develop-
   mental relations.

355. Experimental Embryology (4 q h cr) Severn
   Prereq. 350, 354
   An introduction to experimental procedures involving non-human material
   to explain some of the causal mechanisms underlying the processes of growth,
   differentiation, and morphogenesis, with correlation of these mechanisms to
   human development.

356. Advanced Human and Comparative Neuroanatomy (4 q h cr) Earle
   Prereq. Anat 312 or 350
   A phylogenetic study of the nervous system of vertebrates including a practical
   analysis of techniques used in experimental neurology.

360. Seminar (1 q h cr per q I, II, III) Staff
   Prereq. Permission.
   Presentation of problems and accomplishments of investigations conducted by
   the graduate students and members of the department, with critical discussion.

361. Advanced Gross Anatomy (Surgery 361, Dentistry 392) (3-10 q h cr) Bach,
   Holyoke, Severn
   Prereq. Anat 310, 311, 312
   Studies of general and special gross dissection of the human body.

362. Fundamentals of Electron Microscopy (5 q h cr) Gardner
   Prereq. Anat 311
   Instruction in the general theory, and practice of operation of the electron
   microscope, including special methods involved in fixation, embedding, section-
   ing, and mounting of specimens.

363. Selected Problems in Electron Microscopy (5-10 q h cr) Gardner, Staff
   Prereq. Anat 362
   Special problems will be selected involving the ultrastructure of organelles
   within cells, of plasma membranes, interrelationships between cells or the char-
   acteristics of intercellular substances as revealed by the electron microscope.

364. Advanced Neuroanatomy and Neurophysiology (3-9 q h cr) Skultety
   Prereq. Permission of the instructor
   An advanced and detailed study of the anatomy and physiology of the human
   central nervous system.

365. Vertebrate Cytogenetics (4 q h cr III) Hard
   Lect 2 lab 4. Prereq. Permission of instructor.
   A lecture and laboratory course dealing with the behavior of somatic and
   germinal cells in division. The medical aspects of chromosome anomalies will be
   emphasized. Given during the first 4 weeks—spring quarter. (This is one section
   of a more extensive graduate course—365).

366. Molecular and Cellular Aspects of Development (3 q h cr) Severn
   Prereq. Permission of instructor.
   A study of the cell, its organelles and specific products and their role in
   developmental biology.
367. Topographical Anatomy (4 q h cr) Holyoke, Severn
   Prereq Permission of instructor
   A study of the structural relationships of the human body as viewed from
   serial sections in horizontal and sagittal planes. Given by arrangement and
   upon sufficient demand.

368. Teratology (2-4 q h cr III) Severn, Staff
   Lect 2 lab 6. Prereq Permission of instructor
   A study of potential or known etiological causes of congenital malformations;
   their deviation from normal development; their frequency and distribution, and
   their management. Given during the second 4 weeks—spring quarter.

369. History of Anatomy (1 q h cr) Staff
   Prereq Permission of instructor
   A series of twelve lectures or seminars on various phases of the history of
   anatomy as a science.

388. Master’s Thesis (9-15 q h cr)

399. Doctoral Thesis (cr arr)
   In addition to the above, the department offers graduate courses which are not
   listed as Medical College electives. The student interested in Graduate College regis-
   tration will find these courses listed in the Graduate College Bulletin.

Biochemistry

Professors Ruegamer, Chairman, Carver, Harman, Jacobl, Lijinsky, Matschiner,
Morgulis, Emeritus, Ryan, Tobin; Associate Professors Barak, Barker, Beber, Emeri-
tus, Davis, Emeritus, Goldsmith, Lee, Mahowald, Mehlman, Mirvish, Raha, Wilder;
Assistant Professors Charnock, Copenhaver, Crass, Haven, Hofert, Keefer, Menahan;
Instructors Madappally, Mishra.

In addition to a curriculum of required and elective courses offered to medical
students, the department also offers one or more graduate-level courses each quarter
to graduate students working for an M.S. or Ph.D. degree in Biochemistry or related
discipline. A course in Basic Biochemistry is also offered on a regularly scheduled
basis to students in the School of Nursing.

BIOCHEMISTRY—08

310. Cellular Biochemistry (6 q h graduate cr I, IV)
   This course includes all of the fundamental aspects of cellular biochemistry
   through basic intermediary metabolism. The major areas of carbohydrate, pro-
   tein, lipid, amino acid, and nucleic acid chemistry and metabolism are covered.
   In addition, protein synthesis and genetic control, radio isotope theory and
   application, biological oxidations, and enzyme chemistry and kinetics are
   studied. Demonstrations and conferences are included as part of the course.

311. Systems Biochemistry (4 q h graduate cr III)
   Prereq Biochem 310 or its equivalent
   Four major areas are covered: 1) specific tissue metabolism; 2) endocrinology;
   3) nutrition; and 4) acid-base electrolyte chemistry.

312. Experimental Biochemistry
   Prereq Biochem 310. Offered concurrently with Biochem 311
   This course consists of three categories of selectives from which the freshman
   medical student may select the one which is most interesting and useful to
   him. Sophomore, junior, and senior medical students may elect to take addi-
tional Colloquia topics in subsequent years, and those students who wish to
continue a research project in subsequent quarters may do so in many instances
by making arrangements with the individual faculty member involved.

A. Colloquia (1 q hr graduate cr per q III, max 3)
   Small groups of students meet with faculty advisors to discuss a particular
   subject in depth. The student reads selected papers from the biochemical
   literature and discusses the experimental design, methods, data, and inter-
   pretation of the data with the group.

B. Laboratory Techniques (2 q h graduate cr per q III)
   The student spends a minimum of one afternoon each week in the research
   laboratories of faculty members, learning the principles and application of
   selected techniques to the study of problems in biochemistry.

C. Research Projects (3 q h graduate cr per q I, II, III, IV)
   The student chooses from a variety of research projects directed by indi-
   vidual faculty members. The student helps to plan the project, learns to
   perform the techniques and methods needed, collects the data, and helps to
   summarize and interpret the results.
350. **Advanced Topics in Biochemistry** (5 q h cr per subdivision; see G below)
   *Prereq* Biochem 310. Available to all students
   One subdivision of this course will be given each fall, winter, and spring quarter except G which may be given concurrently with another subdivision or during the summer quarter. The subdivisions constitute an advanced and comprehensive coverage of modern biochemistry.
   A. Enzymes
   B. Carbohydrates
   C. Proteins
   D. Nucleic Acids
   E. Hormones
   F. Lipids
   G. Special Topics (1-5 q h cr)

360. **Advanced Techniques in Biochemistry** (1-8 q h cr per subdivision; max 18)
   The subdivisions of this course are given periodically and permit the advanced study of the principles, application, and use of specialized techniques and instrumentation employed in biochemical research. Because of limited facilities and staff, it may be necessary to restrict student enrollment.
   A. Instrumental and Physical Procedures
   D. Radiisotope Procedures

370. **Seminar in Biochemistry** (1 q h cr per q)

380. **Research Other Than Thesis** (1-9 q h cr)
   Students wishing to do research other than for thesis credit may do so by special arrangement with a faculty member of the department and with the approval of the Departmental Graduate Committee.

398. **Master’s Thesis** (max 9-15 q h cr)

399. **Doctoral Thesis** (cr arr)

**Correlation Courses**

**CORRELATION.—12**

341. **Genetics** (total 12 hrs) Eisen, Staff
   Current principles and concepts of medical genetics are discussed on the subcellular to the organizational level. Examples of gene and chromosome disorders are presented from both clinical and basic science points of view. Emphasis is placed throughout the course on the indications for, and techniques and procedures involved in, genetic counseling. Particular emphasis is placed on the subject of in utero detection of genetically abnormal fetuses.

**Dermatology**

Professors Fusaro, Chairman; Cameron Emeritus; Assistant Professor Johnson; Instructors Bell, Frederickson, Rustad; Clinical Instructor Barthell; Senior Consultant Wilson.

A foundation in dermatology is laid by lectures, clinics, and demonstrations. At the University Hospital and its affiliated hospitals, the students are brought in personal contact with patients whom they observe throughout their entire care under the supervision of the attending physician. A large and carefully selected collection of photographs is available for use.

**DERMATOLOGY.—16**

346. **Dermatology Clerkship**
   Periods Offered: Each 4 weeks
   Student Limit: 2
   A basic 4-week elective in dermatology is offered which includes outpatient clinics, ward rounds at the teaching hospitals, private patient experience, lecture-demonstration periods with kodachromes, dermal histopathology, and exposure to the various modalities of treatment in dermatology. This elective is designed to give increased learning opportunities for those planning a career in dermatology, or those desiring more knowledge of dermatology while making career decisions or as it relates to their career in another discipline.
   Alternative programs are offered:
   1. For those planning a career in dermatology, an 8-week unit is advised, and larger units can be arranged. Suggested total programs include a unit in microbiology (including mycology and immunology), a unit in pathology, a unit in therapeutic radiology, a unit in plastic surgery if available, and one or two units in pediatric outpatient clinic, psychiatry, or medicine outpatient clinics.
2. A part-time elective (half-days) over an 8-week period and combined with another elective is offered. A precise schedule of activities in the department should be obtained while arranging this elective. See 342, Internal Medicine, page 56.

Department of Family Practice


The objective of this Department is to prepare the student to carry out his function as a leader and coordinator of the health care team as he provides access to the health system and assumes continuing responsibility for management of his patients over a long period of time. More specifically, the program is designed to do the following:

1. Provide a stimulating experience in a model of family practice which will imbue the student with a philosophy of family practice and an understanding of the role of the family physician.

2. Help the student acquire excellent skills in diagnosis, treatment, and management of patients and technical procedures appropriate for family practice.

3. Help the student acquire the knowledge and appropriate depth in various fields of medicine encompassed by family practice.

4. Provide opportunity for the student to develop mature clinical judgment and appreciation of the limitation of his competence.

5. Provide understanding of research and methodology in problems relating to the delivery of health services.

6. Encourage students to develop life-long habits of learning and an understanding of the role of continuing education in maintaining professional excellence.

FAMILY PRACTICE.—86

342 A. Family Practice Clinic Clerkship
A clinical experience in the Family Practice Clinic of the Medical Center involving physical examinations for the Concentrated Employment Program and treatment of acute illness and trauma. Participation in Family Practice seminars. Students may also take this as part of their ambulatory medicine requirement. Limit 2.

B. "W" Street Family Practice Clinic Clerkship
A clinical experience at the University satellite clinic in South Omaha. Covers all clinical areas. Full-time and volunteer faculty. Limit 1.

C. Family Practice Clerkship—Immanuel Medical Center
A clinical experience, both inpatient and outpatient, on the Family Practice service. Average monthly census of patients per volunteer faculty member is 25. Limit 2.

346 A. Private Practice Office Clerkship
This clerkship offers a chance to participate in and observe private practice in family physicians' offices in Omaha and Lincoln.

B. Community Emergency Room—Methodist
This is an experience at the Methodist Hospital and will show the operation of a community emergency room in a large community by full-time staff men who are also volunteer faculty of the College of Medicine. Limit 2.

C. Community Emergency Room—Immanuel
See 346 B. Limit 2.

D. Community Medicine Clerkship
Observation and experience in county health departments including environmental health, school health, public health clinics, voluntary health agencies, welfare department medical activities, and industrial medicine. Limit 4.
E. Migratory Health (June only)
The student will participate in the Nebraska Migrant Health Project as a member of the health team in the Family Health Clinics and other activities. Limit 1.

F. Indian Medicine Clerkship
This experience at the United States Public Health Service Hospital in Winnebago, Nebraska, includes observation and experience in dealing with the medical and social problems of the Indian. It involves working in the 42-bed USPHS hospital and working in the outpatient clinics on the Indian reservation. Living facilities are furnished by USPHS. Limit 1.

348. Community Preceptorship (4, 8, or 12 weeks)
This is a clerkship with a solo, dual, or group practice in which the student is afforded the opportunity of observing a local community and its interrelations with the practice of medicine in that community. The student may elect an additional 4 or 8 weeks, and so complete a total of 12 weeks in an outstate preceptorship if so desired.

349. Research Project in Family Practice (4 weeks)
The student may select a project in which he is particularly interested and with the approval of the faculty may pursue this project intensively for four weeks. Such projects might be concerned with the delivery of health care or with the value of screening procedures. Faculty advice will be given and the research project will be structured.

Interdepartmental
INTERDEPARTMENTAL.—88

300. Dean's Course (I, II, III) Kugel
Medicine has become an ever more complex field as society demands more health care for more people, as people request the physician to know all about matters such as sex education, as new knowledge in medicine must somehow be made part of the curriculum, and as more students from minority groups must be incorporated into the system. These and other topics form the basis of the Dean's Course. The content of the course is reviewed with the Dean by a student committee and, working together, the course takes form. This course attempts to cover current health issues which have not yet been developed as part of the regular curriculum.

310. Reproductive Biology (II, III)
Coordinated course considering population dynamics, reproduction, intrauterine and neonatal development. Obstetric features of pregnancy and delivery are included.

311. Human Genetics (total 15 hrs) Eisen, Staff
Current principles and concepts of medical genetics are discussed. Examples of gene and chromosome disorders, their mechanisms, and possible etiologies are presented. Stress is placed upon an integration of both basic science and clinical points of view. Particular emphasis is placed on the subject of the current status and implications of in utero detection of genetically abnormal fetuses. Procedures of genetic counseling are discussed throughout. This course, or its equivalent, is required for the elective coordinated laboratory course in Human Cytogenetics.

312. Values in Medicine (III) Kepler, Staff
An introduction to the total care concept, emphasizing the importance of religion in medical practice for patient and physician. The tradition of the professional man. Clergy's role in total medical care. Pertinent features of the Jewish and Christian faiths and their attitudes in certain problem areas. Students will organize the presentation and discussion of several sessions dealing with the physician, the patient, and the patient-doctor relationship. Organized by a physician with religious training, the course will feature a number of distinguished visiting speakers.

313. Technics of Clinical Science (II, III)
Introduces features of clinical data gathering including obtaining histories and physical examination information in a clinical setting.

314. Neuroscience (Anatomy 312 and Physiology & Biophysics 311) (II)
An interdepartmental course taught conjointly by staff from the Departments of Anatomy and of Physiology & Biophysics. The structure and function of the peripheral, autonomic, and central nervous systems, with clinical correlations.

320. Reproductive Biology (I)
Continues in units examining abnormalities and changes encountered in stages of life from birth to senescence.
323. Technics of Clinical Science II (I, II, III)
Involves special techniques of evaluation and examination as well as the approach to solving the problems presented by patients.

330. Clinical Science Series (I, II, III, IV)
A continuous series of lectures and demonstrations organized in subject areas by interdepartmental faculty committees. Designed to provide the background in clinical science deemed basic for every physician irrespective of his career. All traditional clinical departments plus Pathology, Physical Medicine & Rehabilitation, and Radiology participate in this series.

Internal Medicine

Organization: Chairman—Joseph C. Shipp; Vice-Chairman—Daniel B. Stone; Director of House Staff Program—Daniel B. Stone.

Medical Services:
Hospital, University of Nebraska—Chief, Joseph C. Shipp
Hospital, Veterans Administration—Chief, Robert Eckland
Hospital, Douglas County—Chief, J. C. Davis, Jr.
Hospital, Bishop Clarkson Memorial—Chief, Frederick Ware
Hospital, Immanuel Medical Center—Chief, Jack K. Lewis
Hospital, Nebraska Methodist—Chief, John C. Sage
Hospital, University Medicine Clinics—Chief, Joseph C. Shipp

Section of Cardiology—Acting Head, Robert L. Grissom
Cardiovascular Catheterization Laboratory—Head, Robert L. Grissom
Section of Endocrinology and Metabolism—Head, Daniel B. Stone
Section of Gastroenterology—Head, Frederick Paustian
Division of Hematology—Director, Perry Rigby
Section of Infectious Disease—Head, J. C. Davis, III
Division of Oncology—Head, Henry Lemon
Section of Pulmonology—Head, Irving Kass
Section of Renology—Acting Head, George Loomis

It is the aim of instruction in Internal Medicine to establish a broad and thorough understanding of patients with disease and to develop a scholarly approach to the study of medical problems. Intensive study by each student of relatively fewer patients is emphasized rather than superficial observation of many patients. The student studies health as well as disease, and early phase as well as late stage disease. Small group conferences (four to six students) are utilized, with each member of the group participating. Time is allowed in each weekly program for reading, research, and other independent pursuits for the purpose of establishing habits for self-development that will persist for life.

INTERNAL MEDICINE—20

310. Clinical Science Technic (Interdepartmental 313) (II, III)
Introduction to the experience of the history interview and the discoveries of the physical examination. Interdepartmental, using one hour lecture and two hours "laboratory" in groups of four students per instructor.

321. Clinical Science Seminar (III)
Application of scientific knowledge to the patient and his puzzling problems. Interdepartmental with surgery.

322. Clinical Science Technic (Interdepartmental 323)
This course is coordinated with and a continuation of 310. Further development of skills in history-taking and in the performance of the physical examination is the aim. Interdepartmental.
334. Junior Medicine (8 weeks I, II, III, SS)
The student is an integral part of the team, including medical students, house officers, faculty, nursing staff, dietetic staff, social service staff, which is responsible for the care of the in-patient. The student participates actively, under supervision, in diagnosis and care, with a close tutorial relationship with others in the team in teaching rounds and conferences.

342. Ambulatory Medicine (8 weeks)
Ambulatory medicine, or the office practice of medicine, is an integral part of the practice of medicine. Learning ambulatory medicine will be of even greater importance in the next decade. The student will be a part of the team including house officers, faculty, nursing, dietetic and social service staff, which focuses upon the ambulatory patient and gives attention both to the healthy person and to the early detection and treatment of disease.

INTERNAL MEDICINE ELECTIVES.—

341-A. Advanced Internal Medicine Seminar Course (cr arr) Staff
Especially to be considered with Basic Science part-time electives.

343. Honors Program in Medicine (cr arr, 8 weeks; max 4 students) Shipp, Stone, Staff
This program excludes those features that are an inherent part of the regular programs in the Department of Medicine. The program, designed for students with high aspirations, offers an intensive learning experience, in a number of restricted fields, with intellectual benefits that are capable of application to any problem that can be analyzed by the scientific approach. The program encourages aspiring students to acquire a critical approach in identifying problems in medicine and its related disciplines, in collecting data, in analyzing data, in drawing inferences, and in communicating with clarity. The general objective is to increase the quality of the intellectual life, to emphasize a scientific approach, to enhance ability in communication, and to develop those intellectual qualities that have generalized application.

344. Inpatient Clerkship (max 16 students)
Offered in the fourth year for 8 weeks, which is preferred, but also for 4 weeks, as an inpatient general internal medicine experience. It is an advanced sequel to 334 and gives the student greater responsibility. Specific hospitals in Omaha or other medical centers may be chosen by the student by arrangement with the department. Students electing 8 weeks will have preference for their hospital assignment.

346. Subspecialty Electives
Special part-time basic science offerings can be elected concurrently with the following by arrangement with the staff member listed.

B. Use of Isotopes in Internal Medicine Matoole, Novak, Quaife
C. Cardiology (4 weeks; max 4 students) Grissom, Staff
A combined offering of medicine, surgery, and pediatrics. Hemodynamics, electrocardiography, photocardiography, inpatient and outpatient experience. May be taken as combined course or in individual department.

D. Diabetes and General Medicine
E. Endocrinology and Metabolism (max 4 students) Meyer
This elective is designed to offer careful study of endocrine disorders. Active participation in the clinical consultation service and endocrine outpatient clinics is a primary function. These activities include consultation at all University affiliated hospitals, review of diabetes mellitus and metabolic disorders, and conjoint clinics with obstetric and pediatric endocrinology. Emphasis is made on performance and understanding of the complex diagnostic evaluation of endocrine function. Individual literature review and study is encouraged during twice-daily staff rounds, as well as at weekly topical seminars.

G. Gastroenterology (max 4 students) Paustian, Staff
This elective in digestive diseases and nutrition emphasizes the application and correlation of the basic science principles of physiology, pharmacology, biochemistry and pathologic anatomy in clinical gastroenterology. There will be one position available on each of the Gastroenterology Services at the UNH, BCMII, and OVAH and DCH and one position in hepatology.
H. Hematology (max 10 students) Rigby, Staff
The Hematology Division offers a broad program of training in the Departments of Internal Medicine, Pediatrics, and Pathology with emphasis on new concepts in the management of hematologic problems. Patient care serves as a basis for teaching the principles of diagnosis and management of the anemias, leukemia, hemorrhagic disorders and disorders of immunology. Patients are seen in the University Hospital on the Hematology Service as well as the Veterans Hospital, Douglas County Hospital, and the Clarkson Hospital. Consultations are answered from general internal medicine and other subspecialties and patients are seen in the adult and pediatric-hematology outpatient clinics. Teaching in a more structured manner is done in weekly blood morphology demonstration and in "Blood Club," in which a variety of hematologic subjects are discussed. Students who elect Hematology have ample opportunities for reading and a research opportunity can be provided for the interested student by special arrangement.

I. Infectious Disease (cr arr) Davis, Staff

J. Renal (4 weeks; max 2 students) Loomis, Staff

K. Metabolism (cr arr) Tobin, Associates

L. Medical Electronics (I, III; 8 weeks, ½ time; min 3 students, max 6) Haack, Staff
Prereq Physiol 370

P. Oncology (max 4 students) Lemon, Foley, Staff
Medicine, radio-therapy, and surgery inpatient and outpatient experience. Training in early detection, carcinogenesis, cell biology, clinical pharmacology, paraneoplastic syndromes, and kinetics of cell growth including research experience if desired.

S. Psychosomatic Medicine (max 3 students) Ward
Training in the principles of neurophysiology in relation to the psychophysiological reactions with emphasis on the management of patients with psychophysiological illnesses.

T. Pulmonary (max 4 students) Kass, Staff
One student may spend 4 weeks in Pulmonary Physiology Lab. Zamel, Staff

348. Off-Campus Elective (4 or 8 weeks)
Clerkships in University or teaching hospitals elsewhere. By individual approval only.

349. Research in Medicine
Should consider applying for research fellowship several months in advance.

350. The Physiology of Symptoms (1 q h cr per q—total 3) Grissom

351. Problems in Metabolism and Endocrinology Grissom, Henn, Paustian
A. Diabetes Mellitus (1 q h cr per q—total 3)
B. Advanced Endocrinology (1 q h cr per q—total 3)
D. Metabolism and Nutrition (1 q h cr per q—total 3)
E. Rheumatology (1 q h cr per q—total 3)

352. Advanced Gastroenterology and Biliary Diseases (1 q h cr per q—total 3) Paustian, Staff

353. Advanced Studies of the Cardiovascular Renal System Grissom, Staff
A. Cardiologic Diagnosis and Electrocardiography (4 q h cr per q—total 12)
B. The Management of Heart Disease (3 q h cr per q—total 9)
D. Hypertension and Nephritis (3 q h cr per q—total 9)
E. Peripheral Vascular Diseases (1 q h cr per q—total 3)

354. Infectious Diseases, Chemotherapy and Antibiotics (3 q h cr per q—total 9) Davis, Staff

355. Advanced Allergy (1 q h cr per q—total 4) Grissom

356. Advanced Hematology (Pathology 365) (Anatomy 353) (2-3 q h cr per q—total 6) Rigby, Staff

357. Cardiovascular Seminar (1 q h cr per q)

358. Medical Seminar (1 q h cr per q)

359. Master's Thesis (9-15 q h cr)

360. Doctoral Thesis (cr arr)
Medical Bibliography

Librarian Hetzner; Associate Librarian Nash and Staff.

Lectures and conferences are held to acquaint the student with resources in medical literature and bibliographic methods in medical research.

First year students are given instruction regarding the use of reference and indexing tools and receive practical experience in the application of literature-searching techniques. Advanced students may receive instruction and arrange conferences on the bibliography of science and the problems involved in thesis writing.

Medical Ethics

Selected physicians and laymen present pertinent facts and considerations relating to the economics, the organization, the types of practice and the obligations of physicians to patients, to their community and to their fellow physicians.

MEDICAL ETHICS.—24
340. Medical Ethics and Professional Relationships (III)

Medical Jurisprudence

Associate Professors Ellick, Chairman, Spire; Instructor J. Langdon.

The course in medical jurisprudence has for its purpose the presentation of medico-legal relationships in order that the student may be familiar with that increasingly pertinent phase of professional life and practice. This course is a comprehensive survey of the medico-legal field and a detailed analysis and study of that science which applies the principles and practice of medicine to the elucidation and settlement of legal questions which arise in everyday professional practice as well as in courts of law.

MEDICAL JURISPRUDENCE.—28
340. Medical Jurisprudence (I)

Medical legislation, medical evidence and witnesses, privileged communications, general medico-legal relations, physicians' contracts and compensation, income taxes, malpractice, workmen's compensation law, sterilization and liability of hospitals and nurses are some of the subjects discussed.

Medical Microbiology

Professors McFadden, Chairman, di Mayorca, N. Miller, von Riesen; Associate Professors Dubes, Dye, McCarthy, Tremaine, White; Assistant Professors D. Harvey, J. Jones; Research Assistant Professors Chaudhuri, Soiler; Instructors Kahle, Parsons.

It is the goal of the faculty of this department to develop with the student a balanced concept of medical microbiology and infectious disease. Endeavor is made to demonstrate the principles of pathogenesis, host parasite relationships, and molecular biology as these affect the field of medical microbiology. As specific goals we consider with the student the effects upon the human host of microbial agents and suggest the manner in which a microbiological diagnosis may be made. This is accomplished by lectures and laboratories which emphasize such host parasite relationships, pathogenesis, and principles of infectious disease. Immunity and associated phenomena are discussed.

The course in Medical Microbiology 320 aims to acquaint students with the basic principles of microbiology, particularly as these relate to infection and disease. The instruction offered in this course is supplemented with more advanced and specialized courses (350 to 399 inclusive), for students who are candidates for the M.S. or Ph.D. degree and for other students such as honors students, residents in specialty training, and others desiring advanced work in medical microbiology independently of the requirements for a degree. For more details concerning the program in graduate education, please see the Bulletin of the Graduate College of the University of Nebraska.

MEDICAL MICROBIOLOGY.—32
310. Biology of the Microorganisms McFadden and Staff

A lecture, conference, and laboratory course dealing with the biology of microorganisms capable of producing infectious disease and with the basic principles of immunology. This course places stress upon the microorganism rather than upon pathogenesis of disease and host response to infection.
320. A. B. C. Medical Microbiology (I, II, III) McFadden and Staff
A lecture, conference, and laboratory course dealing with the cultural characteristics, pathogenic properties, immunological responses, host-parasite relationships, etc., of bacteria, fungi, rickettsias, and viruses in general, with special reference to those of importance in disease. This course also provides a consideration of clinical parasitology and deals with protozoa, helminths, and arthropods of medical importance.

350. Physiology of Microorganisms (4 q h cr) von Riesen
Lect 2 lab 4. Prereq MM 320 and one semester organic chemistry (or biochemistry)
A consideration of the chemical composition, structure, growth, and nutrition of microorganisms; the influence of physical and chemical agents; and variation, adaptation, and mutation.

352. Metabolism of Microorganisms (4 q h cr) von Riesen
Lect 2 lab 4. Prereq MM 320 and a course in biochemistry or by special permission
A study of enzymes; the metabolism of carbohydrates, proteins, and other substances; and virulence as a physiologic problem.

354. Principles of Immunology (4 q h cr) Tremaine
Lect 3 lab 6. Prereq MM 320
Detailed study of the nature of antigens, antibodies, and their interactions. Laboratory work includes preparation of antisera, quantitative immuno-chemical methods, principles of serological tests, and study of in vivo allergic reactions.

356. Medical Bacteriology (8 q h cr) Miller, Tremaine, White
Lect 2 lab 4. Prereq MM 320
A detailed study of the morphologic, cultural, antigenic and pathogenic characteristics of disease-producing bacteria including techniques of isolation and identification. This course is to be given over a period of two consecutive quarters.

358. Systematic Microbiology (3 q h cr) Tremaine, White
Lect 3. Prereq MM 320
Study of the systematic relationships of microorganisms. Classification methods, nomenclature and relationships among bacteria, yeasts, molds, viruses, rickettsias, and protozoa are explored. Three discussions per week.

360. Medical Mycology (4 q h cr) Miller
Lect 2 lab 4. Prereq MM 320
A study of the actinomycetes and fungi with particular emphasis on those capable of producing infection.

362. Viruses and Rickettsia (8 q h cr) White
Lect 2 lab 4. Prereq MM 320
A detailed study of the morphologic, physiochemical, cultural, and pathogenic characteristics of human and animal viruses and rickettsia with emphasis on methodology and host-parasite relationships. This course is to be given over a period of two consecutive quarters.

364. Medical Parasitology and Tropical Medicine (4 q h cr) McFadden, Smith
Lect 2 lab 4. Prereq MM 320
A detailed study of protozoan and helminthic agents of disease including consideration of morphology, biology, life cycles, and host-parasite relationships.

366. Microbial Genetics (4 q h cr) Dubes
Lect 2 lab 6. Prereq Zool 141, MM 320, or Microb 111 and Chem 246; or permission of the instructor
A presentation and consideration of current knowledge of mutations and mechanisms of inheritance in microorganisms and viruses, with special attention to the methods of genetical analysis used.

370. Diagnostic Microbiology (3-9 q h cr) McFadden and Staff
By arrangement. Prereq MM 320
Specific techniques for isolation, identification and sensitivity testing of microorganisms from clinical material available in the diagnostic laboratories of the University of Nebraska Hospital and Clinics. Practical approach with conference and laboratory.
A. Bacteriology
B. Serology
D. Virology
372. **Microbiology of Foods and Water** (4 q h cr) Miller, von Riesen
   Lect 2 lab 4. *Prereq MM 320*
   A study of the microorganisms found in and on natural, fermented, and prepared foods, and in water and sewage; spoilage microorganisms; preservation of foods; standard methods for the analysis of foods and water; and the role of foods and water in the transmission of disease agents.

374. **Diseases of Animals Transmissible to Man** (3 q h cr) McFadden, Miller
   Lect 3. *Prereq MM 320*
   A study of the epidemiological factors necessary for the transmission of various microbial diseases of animals to man including a discussion of the infecting agents, their vectors if any, their reservoirs and their interrelationships.

376. **Pathogenesis of Infectious Diseases** (3 q h cr) McFadden
   Lect 3. *Prereq MM 320*
   Every pathogenic organism has its own unique, biological, and biochemical qualities which make possible invasion, multiplication, infection, and disease within the host. This course is concerned with these host-parasite relationships.

380. **Antiseptics, Disinfectants, and Chemotherapeutic Agents** (4 q h cr) McFadden, von Riesen
   Lect 2 lab 4. *Prereq MM 320 and MM 350 or by special permission*
   Theoretical and practical aspects of the influence of physical and chemical agents on microorganisms.

382. Advanced Topics in Microbiology (cr arr) Staff
   *Prereq MM 320*
   Advanced study (research other than thesis) in one of the several disciplines of medical microbiology such as bacteriology, immunology, mycology, virology, parasitology, tissue culture, electron microscopy, etc.

396. Seminar (1 q h cr per q) Staff
   By permission

398. Master's Thesis (9-15 q h cr) Staff

399. Doctoral Thesis (cr arr) Staff

**Medical Social Work**—34

346. Social Service Elective
   Periods Offered: Each 4 weeks
   Student Limit: 2
   Growing awareness of social and cultural assets of an individual influence response to illness. In this clerkship, the student will conduct interviews, identify social problems, marshall social resources, and direct efforts toward solution of the problems perceived. The capabilities as well as the limitations of the social system in relation to illness will be encountered and demonstrated during this clerkship.

**Neurology**


**NEUROLOGY.**—36

321. Structure and Function of the Nervous System and Their Relation to Neurological Disease (1 hr weekly, total 12 hrs) Friedlander, Goldner, Skultety
   A review of neuroanatomy and neurophysiology with emphasis on the implications of these fields in the clinical neurosciences. This course is meant to be a bridge between basic neuroanatomy and neurophysiology and the course in clinical neuroscience.

334. Junior Clinical Neuroscience Clerkship
   Periods Offered: Each 4 weeks
   Student Limit: 12
   Requirement may be fulfilled during third or fourth year program. Students assigned to combined Neurology and Neurosurgical Clinical Service where evaluation, diagnosis, and management approaches are experienced under close faculty supervision.
Clinical Neuroscience Clerkship

Periods Offered: Each 4 weeks
Student Limit: By arrangement
Prereq Neuroscience 334

Extension of experience with clinical neuroscience obtained in 334 course. Inpatients and outpatients are the focus for consideration of neuropathology, neuropsychology, electroencephalography, and neurosurgery. Flexible programs serving needs of student.

A. Clinical Neurology
B. Clinical Pediatric Neurology
   Identical with Pediatric Neurology Elective (60-346-B).

D. Clinical Neurosurgery
   Identical with Neurosurgery Clerkship, Department of Surgery (80-346-D).

Obstetrics and Gynecology

Professors Pearse, Chairman; Redgwick, Emeritus; Research Professor W. Ryan; Associate Professors Cotton, Garlinghouse, Messer, Olson, Rumbolz, J. Scott; Research Associate Professor Barker; Assistant Professors Bohi, Chehab, Collins, Elston, Field, Corby, H. Harvey, Jernstrom, P. Johnson, Magld, Mattox, McGinnis, Orr, Roffman, Schack, Sundell, W. Taylor; Associate Boelter; Instructors Alperin, Beavers, Beckenhauer, Dietrich, Garner, George, H. Hansen, Heidrick, Hirst, K. Lewis, Mishra, Nelson, Nickel, B. Taylor, Yost; Senior Consultants H. Anderson, Luikhart, McGoogan, Morgan.

The objectives of this department are the integration of reproductive physiology, biochemistry, and anatomy with the normal and abnormal problems of obstetrics and female reproductive tract. Lectures and small group seminars carry this integration through the four years of medical school. Obstetric cases are assigned under direction to the third year medical class, and extensive practical experience is provided through assignment to the outpatient prenatal and gynecology clinics and to affiliated hospitals.

Undergraduate students are encouraged to participate in research projects, and those with particular interests are given direction and support. A wide variety of advanced courses is available, and students are urged to select a program to meet their future needs.

OBSTETRICS & GYNECOLOGY—40

320. Introduction to Obstetrics and Gynecology
   Anatomy, physiology, and biochemistry of normal human reproduction, and their relation to clinical obstetrics and gynecology.

330. Obstetrics and Gynecology (I, II)
   Abnormalities and complications of pregnancy, labor, and the puerperium. Theory, diagnosis, and management of gynecologic disorders. Given third year students as part of correlated lecture series.

334. Junior Clinical Clerkship (8 weeks)
   Third-year students are assigned to the University Hospital and affiliated hospitals for inpatient experience and to the University Hospital clinics for outpatient obstetric and gynecologic clinics. They will follow the progress of patients in labor, assist and perform deliveries, follow the evaluation and management of gynecologic patients, assist at operative procedures, and maintain a complete record until the patient is discharged from the hospital. Outpatient experience will include participation in the following clinics: normal and complicated obstetric, tumor, gynecologic, endocrine-infertility, and family planning. Seminars, conferences, and ward rounds are scheduled regularly.

340. Obstetrics and Gynecology (II)
   Sex counseling, family planning, and the relation of complicated obstetrics-gynecology to other medical disciplines.

342. Outpatient (4 or 8 weeks; limit 3) Chehab, Staff
   Obstetric, gynecologic, and specialty clinic experience including family planning. Daily seminars with the faculty to discuss special problem areas in obstetrics and gynecology including endocrinology. Inpatient service by arrangement at affiliated hospitals.

344-A. Advanced Obstetrics (4 weeks; limit 3) Pearse, Staff

344-B. Advanced Gynecology (4 weeks; limit 3) Pearse, Staff
   A University Hospital inpatient service at the intern level emphasizing obstetrics and/or gynecology. Daily participation in staff seminars and teaching activities.
346. Obstetrics and Gynecology Tutorial (4 weeks) Chehab, Field, Jernstrom, McGoogan, Messer, Orr, Pearse, Roffman, Rumbolz, Scott
Individual students work in a one-to-one relationship with the full-time staff at the University Hospital or a volunteer faculty member at an affiliated hospital. By approval only. Limit 1-2 students per faculty member per year.

348. Off-Campus Selectives (4 weeks) Pearse
Clerkships in University or teaching hospitals elsewhere. By individual approval only.

349-P. Research, Family Planning (4 weeks; limit 1) Orr
Problems of family planning, including clinical experience in a variety of settings.

349-M. Research, Maternal and Infant Care (4 or 8 weeks; limit 1) Field
Problems of pregnancy and the perinatal period in relation to maternal health care programs.

349-P. Research, Gynecologic Cancer (4 or 8 weeks; limit 1) Scott
Problems of diagnosis and treatment of malignant disease of the female reproductive system.

349-T. Research, Medical Education Scott
Problems of core curriculum, development of audio-visual aids, and evaluation in undergraduate education.

349. Gynecological Pathology (3 q cr per q-max 9) Scott, Tollman
An advanced course in gross and microscopic pathology in the field of obstetrics and gynecology. The student is required to attend two weekly conferences in gynecologic pathology. Clinical work consists of preparation, review, and description of all specimens submitted in this area.

350. Pelvic Anatomy (4 q cr III) Holyoke
Special dissection and study to cover the basic science aspects of anatomy and embryology as applied to obstetrics and gynecology. This work will consist of special dissection, reading, and histologic study of the generative tract.

351. Gynecological Radiology (1-5 q cr) Meadows, Wilson
Readings, demonstrations, clinics, and seminars designed to show the application of radiographic and radio-therapeutic principles and procedures of obstetrics and gynecology. Conducted in conjunction with the department of radiology, this course gives experience in radiographic techniques, the interpretation of films and the use of X-ray and radium. Independent reports will be required.

352. Gynecologic Endocrinology (3-5 q cr per 4 weeks; 4 weeks) Barker, Mattox
Prereq Biochem 350-C
A course in applied endocrinology with emphasis on the diagnosis and clinical management of patients with endocrine disorders relating to reproductive function.

353. Obstetrical Hematology (3 q cr) Messer, Rigby
A course in applied hematology with emphasis on problems which occur in pregnancy. The lecture series will be accompanied by laboratory work and by clinical work in the clinic and hospital.

354. Research in Obstetrics and Gynecology Other Than Thesis (cr arr)
Specific capacities for research in cancer, family planning, and maternal and infant care exist within the department.

355. Seminar (Weekly Wednesday seminar, 9:00 a.m., 1 q cr per q for Graduate College enrollees, I, II, III—max 8) Pearse, Staff

356. Master's Thesis (9-15 q cr)

The following courses are available to Graduate College students only:

350. Advanced Obstetrics and Gynecology (6 q cr per q, max 24) Staff
Conferences, demonstrations, and clinical assignments designed to familiarize the student with all phases of obstetrics and gynecology. The application of anatomy, physiology, biochemistry, pathology, and microbiology will be stressed. Diagnosis and management of obstetrics and gynecologic conditions will be emphasized.
354. Advanced Course in Gynecological Surgery (4 q h cr per q—max 8) Pearse, Scott
Conferences and demonstrations of principles and technic of gynecological
surgery. The student will perform surgical procedures under the supervision of
the supervisory staff. Special technics such as culdoscopy and gynecography
are included.

399. Doctoral Thesis (cr arr)

**Ophthalmology**

Professors Records, Chairman; Gifford, Morrison, Judd, Emeritus; Associate Pro-
Fessors Alliband, Eagle, Filkins, Truhsen; Assistant Professors Latta, Meinsen,
Vickery; Clinical Assistant Professors Crawford, Statton; Instructors Dinsdale,
Falier, Griffiths, Kurland, Nye, Pemberton, Ramsell, Woodford; Senior Consultant
Wood.

**OPHTHALMOLOGY—44**

320. Medical Ophthalmology (III)
The didactic course consists of demonstrations and lectures on diseases of the
eye, including ocular changes in general diseases. The lectures are illustrated
by cases, diagrams, charts, and slides. The course is supplemented by textbook
work and quizzes.

346. Clinical Ophthalmology

Periods Offered: Each 4 weeks (8 weeks by arr with Chairman)
Student Limit: 1
Student would be involved in all of the activities of the department including
outpatient clinic, inpatient evaluation and operations, special ophthalmologic
clinics, ophthalmology seminars, and eye pathology.

**Orthopedic Surgery**

Associate Professor L. Thomas Hood, Chairman; Professors Hansa, Sr., Teal;
Associate Professors Bach, Burney, Smith; Assistant Professors Dinsmore, Hansa,
Jr., Minard, Pitner, Scott-Miller, Mitchell, Stone; Instructors Horn, Webster, Kettle-
son, Gondring, Lewallen, Miller, Styner.

Orthopedic surgery deals with the diseases, deformities, and injuries of the struc-
tures composing the musculo-skeletal system.

**ORTHOPEDIC SURGERY—48**

344-A. Orthopedic Wards and Clinic Elective (4 weeks) University Hospital
Clinical experience with members of the Orthopedic Staff at the University
Hospital.

344-B. Orthopedic Wards and Clinic Elective (4 weeks) Methodist Hospital
Clinical experience with members of the Orthopedic Staff at the Nebraska
Methodist Hospital.

346. Sports Medicine (elective 4 weeks) Bach
A brief survey of problems involved in sports medicine, particularly with
relation to football.

348-A. Orthopedic Preceptorial Clerkship (elective 4 weeks)
Clinical experience with a member of the Orthopedic Staff at the University
Hospital and affiliated hospitals, as well as outpatient, office, and emergency
responsibilities.

348-B. Off-Campus Orthopedic Surgery Elective (4 or 8 weeks)
Clerkships in University or teaching hospitals elsewhere.

**Otorhinolaryngology**

Professor Yarington, Chairman; Associate Professors Carp, Klabenes, Lovgren;
Assistant Professors Beck, Carter, Crowley, J. Allan Davis, DeMarco, Foote, Yonkers;
Clinical Assistant Professor P. Peterson; Associate Gillies; Instructor Krugman;
Senior Consultants Bunker, Cassidy, John Calvin Davis, Jr.

**OTORHINOLARYNGOLOGY—52**

Two lectures are given on the anatomy of the ear and temporal bone and demon-
stration of the tympanic membrane in the freshman year in anatomy.

Four lectures on the examination of the ear, nose, pharynx, and larynx; and two
2-hour demonstrations on the use of instruments commonly used in ORL examina-
tions are given in conjunction with the sophomore course in Physical Diagnosis.
Clinical science area lectures in the junior year, approximately 10 lectures.
COLLEGE OF MEDICINE

344. Otorhinolaryngology Clerkship
   Periods Offered: Each 4 weeks
   Student Limit: 3
   The student is involved closely with all facets of otorhinolaryngology, gaining a view of the scope of this field. Evaluation of patients, diagnostic considerations, and management approaches are emphasized. The student will participate in all of the activities of the department, including clinical responsibilities, operations, and formal teaching exercises.

349. Fellowship in Otorhinolaryngology
   Periods Offered: Each 8 weeks
   Student Limit: By arrangement
   Designed to support the research interests of a student in any area related to otorhinolaryngology. Eligibility for, and acceptance to, this program, by arrangement with the Chairman of the Department.

350. Fellowship in Otorhinolaryngology (7 q h cr)
   A period of approximately five weeks spent full time in the Department of Otorhinolaryngology participating in all the teaching sessions of the Department. During this time a research project will be carried out and a report rendered to the supervising staff.

351. Advanced Otorhinolaryngology (2 q h cr per q, max 8)
   A series of weekly conferences including one hour of didactic lecture followed by one hour of symposium, covering during the course of the year the broad field of otorhinolaryngology and its application to the clinical and surgical practice of otorhinolaryngology.

352. Advanced Clinical Otorhinolaryngology (3 q h cr per q, max 8)
   A course in clinical otorhinolaryngology utilizing the outpatient clinic where, under supervision of the staff, the graduate student participates in the total care of the outpatients seen.

353. Otorhinolaryngology Seminar (2 q h cr per q, max 8)

354. Seminar in Medical Audiology and Speech Pathology (1 q h cr per q, max 4)
   Yarington
   A series of seminars programmed through a period of one year to cover the correlation of audiology and speech pathology with otolaryngology through presentation of illustrative cases, discussions, and review of the appropriate literature.

355. Otolaryngologic Pathology (3 q h cr)
   A course covering the field of otolaryngologic pathology through review of surgical specimens, seminar discussions of otolaryngologic pathology and observation of the clinical course of the diseases under discussion.

359. Doctoral Thesis (cr arr)

Pathology

Professors McWhorter, Chairman, Berton, John Schenken, Tollman, Wilson; Associate Professors Simons, Assistant Chairman, Kulesh, A. Larsen; Clinical Associate Professor Tanner; Assistant Professors Fitch, Giffen, Emeritus, Greene, Jones, Long, Papenfuss, Roffman, Jerald Schenken, Scott, Skoog, F. Smith, Tamisiea; Instructors Grier, M. Haven, Hicks, Kruger, A. E. Larsen, Padgett, E. Smith, Slasney; Assistant Instructors Bease, Dresesen, Haberman, McIntyre, Pohle; Senior Consultant Foster.

It is the aim of this department to acquaint the student with the etiology, the pathologic physiology, and the morphologic changes produced by disease processes in the human body.

PATHOLOGY.—56

311. Cell Pathology (I)
   The major emphasis in this course is on cellular and tissue reactions to injury. The etiology and pathogenesis of major disease processes is stressed. There is correlation between other basic sciences and cell pathology where appropriate. Instruction is by lectures, illustrated demonstrations, and regularly scheduled small group discussion periods. The small group discussions are so designed as to emphasize the case study approach to the understanding of selected major disease processes.

321 A and B. General Pathology (3 q h graduate cr per q, max 9) McWhorter, Staff
   The organ system approach to the study of disease is emphasized in this course. The etiology and pathogenesis of specific morphologic lesions and associated clinical pathologic correlates are presented by major disease processes. These are, in turn, studied in the context of each major tissue and/or organ system.
The case study approach is strongly emphasized. Clinical pathologic correlation is regularly introduced through the continuation of the small group discussion periods and integral scheduling with formal clinical pathologic conferences. In addition, correlation with other basic science disciplines is stressed. Joint instruction from members of the Departments of Pathology and Medical Microbiology affords the student a more complete understanding of the etiology and pathogenesis of specific infectious diseases and related significant sequelae.

322. Clinical Pathology (3 q h graduate cr) Larsen and Staff
Prereq: Permission
A lecture, demonstration, and minimal laboratory course emphasizing the selection and interpretation of laboratory tests used by the physician. Considerable use is made of small group case discussions to achieve this end.

330. Multidiscipline Conference (Interdepartmental 330 Clinical Science Series)

331. Clinical Pathology (3 q h graduate cr)
Continuation of course 322.

333. Clinical Pathology Conference
Selected cases are presented and discussed stressing clinical laboratory medicine and the practical use and interpretation of the clinical laboratory. An elective.

340. Forensic Medicine (II)
A discussion of the aspects of forensic medicine.

341. Multidiscipline Conference
Continuation of 330.

346. Correlative Pathology
Student Limit: By arrangement, 1-2 students per area
The Department of Pathology provides opportunities in the laboratory diagnostic sections and in Path-Anatomy to study disease in relation to functional abnormalities and structural changes. Students can be involved in any of the areas correlating the manifestations of disease with objective findings.
A. Path-Anatomy (4 weeks)
B. Clinical Pathology (4 weeks)
Biochemistry, blood banking, hematology, microbiology, special biochemistry.

349. Special Problems and Research (4 weeks)
The student interested in a special problem for which supervision by faculty in Pathology is necessary is encouraged to discuss the opportunity directly with the member of the faculty selected.

350. Laboratory Supervision and Administration (2 q h cr) Larsen
Principles and application of clinical laboratory organization, standard operating procedures, laboratory budgets, supply and equipment purchasing, record keeping, personnel relations, employee interviews, hospital-laboratory relationships will be presented.

351. Educational Administration in Medical Technology (2 q h cr)
An introduction to the duties of the teaching supervisor will be presented, including selection, admission and counseling of students, curriculum planning, lecture preparation, and the construction and grading of examinations. The role of the teaching supervisor in public relations and in-service education will also be emphasized.

352. Instrumentation and Quality Control (3 q h cr)
Presentation of various laboratory instruments, technical differences, principles of operation, calibration and maintenance. Principles of statistics as applied to quality control will be presented as well as techniques for insuring accuracy and reproducibility.

353. Coagulation and Blood Components (2 q h cr)
Discussion of the theory of blood coagulation, the clinical tests used to diagnose coagulation disorders and therapy in patients with coagulation diseases. The preparation of various blood fractions to be used therapeutically will be presented.

354. Blood Bank Administration (2 q h cr)
This course is intended to acquaint the technologist with record keeping, blood usage, blood replacement, quality control, sterility testing, and legal responsibility in blood banking.

356. Autopsy Pathology (8 q h cr) McWhorter, Schenken
Prereq: Path 320
In addition to participation in autopsies, the student will study in detail both gross and microscopic tissue changes, and will correlate these with clinical findings.
357. Pathology of Tumors Simons, Tollman, Wilson
   A. An Intensive Course in Oncology, with Special Attention to the Morphology,
      Derivation, and Course of Various Tumors (4 q h cr)
      Prereq Path 356
   B. Studies of Bone Tumors (3 q h cr)
      Prereq Path 357-A
   C. Studies of Tumors of the Nervous System (3 q h cr)
      Prereq Path 357-A

358. Etiology of Tumors (1 q h cr) McWhorter, Wilson
   This will be a general study of the subject of tumor etiology with special empha­
   sis on the phases represented by the investigative work carried on by the stu­
   dent. In large part this will be carried on by study of the periodical literature.

359. Seminar (1 q h cr) Staff
   Prereq Permission

361. Ultrastructural Methods in Pathology (4-8 q h cr) Wilson
   Lect 2 lab 4 or arr. Two consecutive quarters
   Instruction in the techniques for the preparation of human biopsy specimens, experimental animal tissues, bacteria and viruses for electron microscopic exam­
   ination. The course will include material on the theoretical and practical aspects
   of the structure and operation of the electron microscope.

362. Ultrastructure of Cells and Tissues (3 q h cr) Wilson
   Instructions in modern concepts of cell ultrastructure and the association of
   cells in tissues, with emphasis upon the known correlations between structure
   and function.

363. Ultrastructural Pathology (3 q h cr) Wilson
   Prereq Path 321, 356
   Instruction in the ultrastructural aspects of diseased cells and tissues with
   emphasis on preparation of the student for interpretation of the literature and
   for research in this area.

364. Non-Thesis Research (cr arr)
   Prereq Path 356 and 357

365. Advanced Hematology (Internal Medicine 356) (Anatomy 353) (2-3 q h cr per q—
   total 6) Larsen, Pratt, Rigby, Wilson

398. Master's Thesis (9-15 q h cr)

399. Doctoral Thesis (cr arr)

Pediatrics

Professors Van Leeuwen, Chairman; Jenkins, Vice Chairman; Chapple, Crofoot,
Gibbs, Klok, Kugel, LaCrosse, Pearson, Robertson, Emeritus, Thomas; Clinical Pro­
fessor Stafford; Associate Professors C. Angle, Eisen, Hadley, Kepler, Menolascino,
Mooring, Morrison, Oberst, Rath, Saslow, Schliesser, Schreiner, Simon, Sullivan,
Tussing, Wolfensberger, Wood, Zahller; Clinical Associate Professors Bancroft,
Emeritus, Stewart; Assistant Professors Al-Rashid, Amato, L. Eaton, Ebers, Erickson,
Hammer, Kuehn, Mason, McIntire, Miyazaki, Nilsson, Pellegrino, Perry, Schultz,
Tarsney, Willet; Clinical Assistant Professors Bosley, Calvert, Lodge, Stivins,
Wallace; Research Assistant Professor Trembath; Instructors Anderson, Fleming,
Heaston, Hubbard, Struempler, Turner; Clinical Instructors Fijan, Grant; Assistant
Instructors Couch, Eyberg, Fiebro, Focht, Guidera, Hoare, Kimmel, Kliewer, Lock,
Sherman, Stout.

The aim of this department is to develop in the student an understanding of human
growth and development, as well as the diseases characteristic of infancy, childhood,
and adolescence. This is done through the lectures and demonstrations, small group
bedside conferences and seminars, clinical clerkship at the University Hospital and
the Children's Memorial Hospital and the outpatient service at the University Hos­
ital. Special orientation and training in rehabilitation are given at the C. Louis
Meyer Children's Rehabilitation Institute.

Undergraduate students are encouraged to participate in research on a wide
variety of projects, and students who show particular interest in a given problem are
afforded guidance and support in their scientific investigations.

PEDIATRICS.-60

320. Growth and Development (II, III)
   A series of discussions aimed at developing an understanding of the biological
   and behavioral growth and development of an individual from birth through
   adolescence. Examples of common deviations from normal development will be
   included as well as specific procedures for assessment of maturation.
Junior students are assigned to the Jahr Pavilion, the Intensive Care Unit, the Adolescent Ward, and Children's Memorial Hospital. Students are expected to work up patients admitted to these areas including history, physical examination, routine and special laboratory tests in order to establish a diagnosis and plan an effective therapy. They are encouraged to participate actively in management and are expected to have full knowledge of the cases assigned to them and also to be familiar with patients assigned to other students while they are in the hospital.

Students are also expected to attend several conferences and other activities that occur in the department, such as the Pediatric Pathology Conference. They also have several discussions and seminars with different staff members in their subspecialties.

In addition students are encouraged to attend certain functions at Children's Memorial Hospital.

**PEDIATRICS ELECTIVES.**

**342. General Pediatric Outpatient** (student limit 4)
Identical with 344, except in clinic.

**344. General Pediatric Inpatient**
- Periods Offered: Each 4 weeks
- Students Limit: 2
- Prereq Completion of junior pediatric rotation

During the time the student is on the inpatient service, he will work as a junior house officer with opportunity for medical decisions and responsibility commensurate with his background and ability. Supervision will be by full-time pediatric faculty members.

**346. Special Electives**
- Periods Offered: Each 4 weeks
- Students Limit: 2
- Prereq Junior Pediatric Rotation

### C. Pediatric Cardiology and Cardiovascular Disease
Kuehn, Mooring

Preference given to 8 weeks or more.

This elective is intended for students desiring to further their knowledge of congenital heart disease and rheumatic fever. It should be especially useful for those who will practice pediatrics, general practice, or thoracic surgery.

Using the excellent clinical material available, the student will become proficient in auscultation and in the diagnosis and management of infants and children with heart disease. The student should become familiar with pediatric electrocardiography, cardiac catheterization. Some time will be spent in observation of heart surgery and the post-operative management of heart surgery patients.

Correlate hemodynamic studies with patient history and observation. Become familiar with specialized techniques: electrocardiography, cardiac catheterization, dye dilution and hydrogen curve analysis, phonocardiography, vectorcardiography, apex cardiography, central venous pressure, cardiopulmonary resuscitation. Improve examination skills, especially in auscultation. Introduction to ongoing research projects. If interested, work on a senior thesis. Study patients through: a) Four Pediatrics and two Adult Cardiology Clinics, b) Medicine and Pediatric Cardiology in-patient services if desired by students, Beatrice State Home for study of congenital disease, c) Cardiovascular Conferences, 2 per week.

### D. Endocrinology and Metabolism Elective
Jenkins, Wiltse

An individual program, divided among inpatient, outpatient, and laboratory settings, to provide experience in evaluating disturbances in hormonal physiology and growth and inherited disorders of metabolism in childhood.

### H. Pediatric Hematology and Oncology
Al-Rashid

The student will see patients with hematological diseases in the Jahr Pavilion and Newborn Nursery with the staff hematologist. Also the student will work up all new patients seen in the outpatient Pediatric Hematology Clinic. An average of eight to ten patients are seen every Friday afternoon.

Bone marrow sessions and seminars in hematological diseases are held on a weekly basis.
J. Clinical Genetics  Eisen
Course contents and areas of study are: (1) An introduction to the field of medical genetics; (2) mitosis and meiosis, (3) human cytogenetics, (4) genes and man, and (5) genetic counseling.

M. Human Cytogenetics  Eisen
To familiarize students with laboratory techniques in human cytogenetics. Course content includes techniques and applications of sex chromatin preparations, short- and long-term tissue cultures, chromosome preparation, and karyotype analysis. Correlations with clinical cases.

N. Neonatology Elective  Miyazaki, Van Leeuwen
The student will serve as the Nursery House Officer under the supervision of the staff neonatologist. This will include clinical responsibility for all newborns, day and night. There are 100-120 deliveries per month, including twenty to forty “risk” deliveries. Normal newborns are examined at birth and discharged; mothers are appropriately instructed.

T. Pediatric Pulmonary Disease  Gibbs, Hadley
Includes allergy and cystic fibrosis. Primary respiratory disease plays a major role in chronic illness involving children. Bronchial asthma, cystic fibrosis, chronic and recurrent respiratory infections as well as a myriad of other less frequent problems make up a large segment of pediatric practice. Children with chronic and recurrent pulmonary infections demand evaluation including not only allergy, but also immunological deficiency diseases.

U. Pediatric Nephrology  Angle
This elective will center on a clinical research project in pediatric renal disease to be designed by the student and Dr. Angle, and usually employing clinical studies carried out in Pediatric Renal Clinic and inpatient service. In addition, the students will function as fellows in pediatric nephrology in the Renal Clinic and Intensive Care Unit.

X. Children’s Rehabilitation Institute  Trembath
The student will assist the medical staff in the diagnosis and evaluation of multi-handicapped children. This will include the responsibility of the diagnosis of children presented at Children’s Rehabilitation Institute and at the outpatient Developmental Evaluation Clinic at the University of Nebraska, Pediatric Department.

348. Preceptorships
Periods Offered: Each 4 weeks
Student Limit: 1
Prereq By arrangement

A. General Pediatric Preceptorship
Pediatricians throughout the State of Nebraska, and particularly those who are members of Nebraska Pediatric Society, have expressed an intense interest in having medical students spend four or more weeks with them in their private offices. These physicians have agreed to provide meals and lodging for you if you are not able to live at home during this experience.

B. Pediatric Elective at Winnebago Indian Hospital
Main emphasis will be on general pediatrics practice in the context of the general medical care administered on the Indian reservation. Students will accompany one of the physicians in his daily rounds, perform work-ups on patients admitted to the hospital, see children in the outpatient clinic, participate in the prenatal and neonatal clinics, and aid in obstetrical deliveries.

349-B. Fellowship in Cardiovascular Research
Students should apply through faculty prior to December 1 for fellowships ($600 per 8 weeks) which can be obtained from the Nebraska Heart Association or University Research Awards Committee. Designed to develop familiarity with and critical appraisal of published cardiovascular literature.

356. Human Cytogenetics (6 q h cr)  Eisen
Lect 1 lab 10. Prereq Admission to the Medical Science or Genetics Area Programs, a course in plant or animal genetics and permission of instructor. A lecture, laboratory, and conference course involving short- and long-term tissue culture, human chromosome methodology and analysis, human chromosome anomalies and their significance, and autoradiography.

358. Pediatric Research Seminar (2 q h cr per q—max 6)  Al-Rashid, Amato, Ebadi, Eisen, Gibbs, Jenkins, Kepler, Kugel, Menolascino, Pearson, Saslow, Van Leeuwen, Wolfensberger
Selected topics of current research or contemplated research with presentation of appropriate patients.
359. Research in Pediatrics (cr arr) Staff
Prereq or parallel Ped 358
398. Master's Thesis (9-15 q h cr)
399. Doctoral Thesis (cr arr)

Pharmacology

Associate Professor Ebadi, Acting Chairman; Professor McIntyre, Emeritus; Associate Professor Gessert, Humoller, Emeritus; Assistant Professors Gatz, Hendrickson; Instructor Sievers.

PHARMACOLOGY.—66

321. A, B, C, Medical Pharmacology (I, II, III) Staff
Lectures and conferences.
General principles of pharmacology; drug actions on the central, peripheral, and autonomic nervous systems and on cardiovascular, renal, gastrointestinal, metabolic, and endocrine functions; chemotherapy of infectious diseases and neoplasms; toxicology; misuse of drugs.
The four courses immediately following (341-A, 341-B, 341-C, 341-D) are lecture and/or seminar courses. The prerequisite for each is Pharmacology 321 or equivalent. No limit to the number of students.

341-A. Principles of Drug Action Ebadi, Gessert
Consideration of absorption, distribution, metabolism, and elimination of drugs; structure-activity relationships; mechanisms of drug action.

341-B. Effects of Drugs on Bioenergetics Gatz
Biochemical considerations of the effects of selected drugs upon cellular respiration and glycolysis.

341-C. Developmental Pharmacology Ebadi
Physiological and biochemical changes that influence drug metabolism during the developmental period (prenatal to adult).

341-D. Toxicology McIntyre
Poisons, acute and chronic; methods of detection and measurement; antidotes and principles of treatment.

357. Seminar (1 or 2 q h cr per q) Staff

Physical Medicine and Rehabilitation

Professor R. S. Blanchard, Chairman; Associate Professor Morris; Assistant Professor Frost; Associates Aita, Bach, Frickle, Malashock, Swenson, Thomas; Lecturers Breed, Dunevitz, Hobbs, Vogt; Demonstrators Bohnenkamp, Burton; Senior Consultant Hunt.

A foundation in physical medicine and rehabilitation is provided through correlation of basic and other clinical sciences with the problems presented in patients with physical disability, particularly those requiring a comprehensive rehabilitation program for return to successful community living. The faculty participates with other departments in a variety of interdepartmental activities throughout the entire four years to provide a broad understanding of the contribution this specialty can make in the management of patients with both acute and chronic physical disabilities.

The facilities for clinical instruction are University Hospital and the Rehabilitation Center at Douglas County Hospital. The Rehabilitation Center is organized and designed to provide the physically disabled individual with the opportunity to achieve the skills necessary for restoration to his maximum function and independence. The multi-disciplinary approach to the problems of debilitating disease and/or catastrophic injury is presented to the student through lectures, conferences, and demonstrations conducted at the College of Medicine and at the Rehabilitation Center.

This department includes sections of occupational therapy, physical therapy, rehabilitation nursing, speech therapy, activities of daily living, prosthetics, orthotics, medical social work, clinical psychology and vocational counseling. The utilization of personnel in these various disciplines by the physician in his medical management of the patient's problems is demonstrated. The student is oriented to the equipment used, testing procedures available, prescription writing in physical medicine, and medical direction of the therapeutic activities of allied health professionals. Arrangements for clinical clerkships at both facilities may be made.

PHYSICAL MEDICINE AND REHABILITATION.—64
Physiology and Biophysics

Professors Gilmore, Chairman, Bennett, Lowenberg, Paustian, Ware; Associate Professors Lim, Myers, Rose, Stratbucker, Weiner; Assistant Professors Hermismeyer, Morlarty, Weidler, Wolf; Instructors Haack, Miller, Wigton.

Courses 310, 311, and 312 in Medical Physiology and Biophysics are required for the degree of Doctor of Medicine. These provide a widely inclusive study of functional mechanisms within the human body.

To complement biochemical and morphological studies in other departments, emphasis is placed upon the application of biophysical principles to the understanding and measurement of processes in the body.

These medical courses include considerable pathophysiology with illustrative problems from clinical medicine to reinforce the student's understanding of normal function and to prepare him for the application of physiological and biophysical principles to clinical medicine. Courses 310, 311, and 312 may carry graduate credit toward a minor for a graduate student majoring in another department.

Courses in the 340 series are designed as electives carrying credit toward the M.D. They do not carry graduate credit.

Graduate studies leading to the M.S. and Ph.D. in Physiology and Biophysics are primarily designed to train students to become competent research scientists who will be knowledgeable in the major areas of modern physiology and competent to teach at the medical and graduate student level. Courses 310, 311, and 312 are part of the core program. Courses 350-399 also carry graduate credit toward advanced degrees, and, by special arrangement with the department, may be taken as electives by medical students, interns, or residents. See the Bulletin of the Graduate College for details concerning advanced degree programs.

PHYSIOLOGY AND BIOPHYSICS.—68

310. Cellular Physiology and Biophysics (I) Staff
Leet, lab, dem, conf
General cellular physiology and biophysics; cell membrane electrophysiology; basic mechanisms of membrane transport, excitation, inhibition, conduction, synaptic transmission and contraction.

311. Neuroanatomy-Neurophysiology (II) Staff
Leet, lab, dem, conf
An interdepartmental course taught conjointly by staff from the Departments of Anatomy and of Physiology and Biophysics. The structure and function of the peripheral, autonomic and central nervous systems, with clinical correlation.

312. Systems Physiology (III) Staff
Leet, lab, dem, conf
Function of the respiratory, cardiovascular, renal, gastrointestinal, and endocrine systems.

341-A. Principles of the E. C. G. Stratbucker
Periods offered: Winter Quarter
1 hour lecture-seminar per week (or equivalent; to be arranged)
Development of basic principles of electrophysiology of the heart, volume conduction and vector analysis as a basis for electrocardiography.

341-B. Bio-Statistics Lim
Periods offered: Winter quarter
1 hour lecture per week
Student limit: None
Basic principles of probability and statistical analysis with emphasis on application in biological investigations.

341-C. Advanced Neurophysiology Weidler
Periods offered: Spring quarter
1 hour lecture-seminar per week (or equivalent; to be arranged)
Student limit: None
Recent advances in neurophysiology (neurone and neuromuscular). Lectures and discussions based on advanced texts and monographs, and recent research literature.

341-D. Advanced Renal Patho-Physiology Wolf, Ware
Periods offered: Fall quarter
1 hour lecture-seminar per week (or equivalent; to be arranged)
Student limit: None
Principles of renal physiology discussed in relation to specific clinical problems.
341-E. Advanced Respiratory Physiology  Lim
Periods offered: Fall quarter
1 hour seminar per week
Student limit: 12
Lecture series on advanced respiratory physiology, the subjects cover gas laws, lung volumes, spirometry, mechanics of breathing, gaseous distribution, blood gas, acid-base balance, pulmonary diffusion, pulmonary perfusion, ventilation-perfusion relationship and clinical application of lung function.

343-A. Topics in Pathophysiology (1-2 q h cr) Staff
1 hour lecture-seminar per week (or equivalent; to be arranged) on a rotation quarterly basis
1. Cardiovascular
2. Renal
3. Respiratory
4. Neurological
5. Muscular
6. Gastrointestinal
7. Endocrine

343-B. Introduction to Computers in Medicine  Myers
Periods offered: Spring quarter
1 hour per week: (to be arranged)
An introduction to the principles of analogue and digital computers and their application to physiological problems.

350. Special Topics (1-3 q h cr per q, max 12) Staff
Prereq Physiol 310, 311, 312 or equivalent
A methodical overview of the fields within Physiology, taken in rotation, to provide the graduate student majoring in Physiology with a general knowledge of the subject at the level of present day research. It is expected that the candidate for the Ph.D. degree will be registered for this course throughout the major part of his graduate study. By special permission, a student may register for part of this course in support of a master's program or a minor in Physiology.

351. Technique in Experimental Physiology (1-9 q h cr) Staff
Prereq Physiol 310, 311, 312 or equivalent
This course consists of instruction in surgical procedures on mammalia, reptilia, and amphibia and the preparation of organs and tissues in situ and ex situ for experimental study.

352. Application of Mathematical Principles to Physiological Analysis (1-9 q h cr) Staff
Prereq Physiol 310, 311, and 312 or permission
Study of the behavior of physiological mechanisms utilizing first and second order linear differential equations, the Laplace transformation and selected topics from calculus and advanced mathematics.

353. Application of Physical Principles to Physiological Analysis (1-9 q h cr) Staff
Prereq Physiol 310, 311, and 312 or special permission
Physical and electronic principles as used in physiological measurement and analysis.

354. Application of Physiology to Clinical Problems (1-9 q h cr) Staff
Prereq Physiol 310, 311, and 312
Electrocardiography, electrostethoscopy, electromyography, electroencephalography, study of neurological lesions by physiological methods, pathophysiology of cardiovascular disease including cardiac failure and shock, application of clearance techniques and other methods of evaluation of renal disease, clinical evaluation of respiratory function, and the application of experimental methods to the study of problems of disturbed gastrointestinal motility and secretion.

360. Advanced Electrophysiology (1-9 q h cr) Hermsmeyer, Ware, Weidler
Prereq Physiol 310
Theory and methods related to the study of electrochemical processes at the cellular level and a correlation of these with specific mechanisms in specialized tissues.

361. Advanced Cardiovascular Physiology (1-9 q h cr) Gilmore
Prereq Physiol 312

362. Advanced Respiratory Physiology (1-9 q h cr) Lim, Ware
Prereq Physiol 312

363. Advanced Renal Physiology (1-9 q h cr) Gilmore, Wolf
Prereq Physiol 312
364. Advanced Gastrointestinal Physiology (1-9 q h cr) Moriarty, Paustian
   Prereq Physiol 312

365. Advanced Neurological Physiology (1-9 q h cr) Bennett, Weidler
   Prereq Physiol 311

370. Biomedical Instrumentation (1-5 q h cr; except for those completing a graduate
   major in Physiology) Haack
   Prereq Physiol 352
   (Credit will not be allowed in both this course and EE 200)
   An introduction to electronic circuits, vacuum tube and transistor amplification,
   Methods of detecting, recording, and measuring biological signals. Instrumentation
   as a system.

371. Electric and Magnetic Fields and Traveling Wave Phenomena in Physiology (1-9
   q h cr) Myers
   Prereq Physiol 352 and 353 or special permission
   Study of electrostatic, magnetostatic, and electrodynamic physiological mechan-
   isms and various traveling wave phenomena in physiology.

372. Application of Linear Systems Analysis and Control Theory in Physiology (1-9
   q h cr) Myers
   Prereq Physiol 352 and 353 or special permission
   Systems analysis of physiological mechanisms using transform methods, analysis
   of physiological control mechanisms and study of stability criteria.

373. Analog and Digital Computer Techniques in Physiology (1-9 q h cr) Myers
   Prereq Physiol 352 and 353 or special permission
   Analog and digital computer solution of physiological mechanisms described by
   linear and nonlinear differential equations, simulation of physiological mechan-
   isms and use of computers to plan and control laboratory experimentation.

377. Seminar (1-2 q h cr per q) Staff
   By special arrangement

379. Research Other Than Thesis (1-9 q h cr) Staff
   By special arrangement

389. Doctoral Thesis (cr arr)

Preventive Medicine

Associate Professor J. Calvin Davis, Acting Chairman; Professor Potthoff, Emeritus;
Associate Professor Fuening; Assistant Professors Fleischli, M. Johnson, Kutler.
These courses aim to give the students basic orientation and preparation related
 to physician’s increasingly important responsibilities in preventing disease, pro-
 moting efficiency, acting as health counselors and serving as community leaders in
health matters.

PREVENTIVE MEDICINE—72

320. Ecology of Disease (2 hrs weekly, II)
   Fundamentals of epidemiology as applied to the infectious and non-infectious
diseases.

321. Ecology of Health Care (1 hr weekly, III)
   Introduction to statistical analysis; community health, occupational and envi-
 ronmental health; economics of health care.

Psychiatry

Professors Eaton, Chairman, Aita, Burrows, Ellingson, Elliott, Emeritus, Roth,
Tunakan, Wilgton, J. Williams, Witson; Research Professor Carver; Clinical Asso-
ciate Professor Stein; Associate Professors Bartholow, Dodge, Elsen, Fine, Gysin,
Emeritus, Hook, Menolascino, Muffy, Osborne, Peterson, Rose, Starr, Strider, Wolf-
ensberger; Assistant Professors Bean, Beitenman, Berry, Blose, Copenhaver, L.
Eaton, Ellis, Ettinger, Garetz, Goldner, Innes, Kaye, Kenney, LoPresti, Okura,
Peck, Richardson, Sonderegger, West, Wieland, M. Williams, Wood, Yager; Asso-
ciates Ingham, R. Jones, Young; Research Associate Reihtart, Emeritus; Instructors
Benschoter, Cunningham, Donaldson, Fix, Hartung, Herrick, Hubbard, Melcher,
Michael, O’Connor, Pettipiece, Pyle, Riederer, Sasser, Schaefer, Shaw, Sjogren,
Stocke, Udgraaff, Van Fleet, Wisman; Assistant Instructors Goodloe, Langhus,
Lathrop, Lund, Nelle, J. Smith, B. Williams, Winchester.

Courses are planned to give the student, commencing in his freshman year, cor-
related, progressive training in the anatomical, physiological, and psychological
fundamentals of psychiatry.
Lectures and demonstrations in the freshman year emphasize the significance of personality development in relation to normal and abnormal functioning. The sophomore program consists of lectures and case demonstrations in basic psychiatry which include descriptive and dynamic psychopathology and techniques of examination. In the junior and senior years stress is placed on supervised experience with psychiatric patients, on inpatient, day-patient, and outpatient basis. Formal lectures are kept to a minimum. Instruction in psychiatry is correlated with the teaching in other departments.

PSYCHIATRY — 70

310. Introduction to Psychiatry and the Behavioral Sciences (3 q h cr II; 3 hr weekly)
Burrows and Staff
This course is designed to give the student, via some understanding of the contributions of both behavioral and biological science, an appreciation of the development of man as a physiological and psychological entity reacting to intrapersonal and interpersonal changes and functioning in health and in illness within the context of family, society, and culture. It focuses on an understanding of the development of behavior in the context of both the normal and the abnormal. Its objective is, while teaching the student some of the uses of basic psychiatric techniques in other branches of medicine, to help to obliterate the "mind-body" dichotomy thus giving the student the ability to deal with the patient as a "whole" person rather than a series of systems. It is organized under the headings: 1) human development, 2) biological and behavioral factors in human development and function, 3) man in his environment, 4) psychological medicine and its role in modern society.

310-A. Reproduction and Development (3 q h cr II; 3 hrs weekly) Peterson, Strider
This course consists of a series of interdisciplinary seminars conducted jointly by the Department of Psychiatry and the Department of Pediatrics. The focus is on the community, the family, and the individual and emphasis is on normal developmental patterns. In tracing the stages of development common to man as he develops in different social groups, concepts are utilized from the disciplines of anthropology, sociology, biochemistry, genetics, psychology, general medicine, pediatrics, and psychiatry.

320. Basic Psychiatry (3 q h cr I, II, III; 1 hr weekly) M. Eaton, Peterson, West
During this course lectures and demonstrations of clinical material are held at the Nebraska Psychiatric Institute. The historical background of psychiatry, methods of interviewing, history-taking and general mental examination are presented. Descriptive aspects of clinical syndromes are presented. The course is preparatory to the junior clerkship in psychiatry and gives the student a basic understanding of mental illness from the standpoint of a general practitioner.

320-A. Development of Man (III; 3 hrs weekly) Fine, Kenney
This is a sequence of lectures and discussions on clinical aspects of human development through the life cycle. Adaptations, stress, and specific syndromes of various types are considered. Information from pediatrics, internal medicine, and pharmacology are integrated with psychiatric material toward holistic considerations of stress and adaptation.

326. Introduction to Psychiatry (cr arr) Bartholow
Periods offered: Winter or spring quarter
Student limit: None
Prereq By arrangement
This elective acquaints the student with the basic principles of psychiatric practice. The student will work in close conjunction with an assigned staff member.

334. Clinical Clerkship (SS, I, II, III) Peterson and Staff
A full-time eight-week clerkship is elected in either the junior or senior year. Students are assigned to instructors on a tutorial basis and under this detailed supervision are assigned patients on the adult inpatient service (may include adolescent unit, alcohol unit, Veterans Administration Hospital psychiatry service); adult outpatient service; children's service; handicapped children's clinic, liaison service; and the division of preventive and social psychiatry. Although assigned to a specific service, a core-curriculum of lectures, seminars, and demonstrations of common psychiatric disorders provides each student with experiences on all services of the Nebraska Psychiatric Institute.
341-A. Alcoholism and Drug Readings (4 weeks, by arr) Blose
Periods offered: All 4 quarters: 4, 8, or 12 weeks; full or half-time
Student limit: By arrangement
Prereq 1st year
Lectures, demonstrations, seminars, and review of literature concerning alcoholism and drug addiction.

341-B. Clinical Psychology (4 weeks, by arr) Strider
Periods offered: All 4 quarters: 4, 8 or 12 weeks; full or half-time
Student limit: By arrangement
Prereq 1st year
Lectures, demonstrations, seminars regarding group interaction, psychological testing and psychopathology.

341-C. Community Mental Health (4 weeks, or by arr) Menolascino
Periods offered: All 4 quarters: 4, 8 or 12 weeks; full or half-time
Student limit: By arrangement
Prereq By arrangement
Lectures, demonstrations, seminars with experience in working with the Preventive and Social Psychiatry Division of the Nebraska Psychiatric Institute.

341-D. Introduction to Counseling of Sexual and Marital Problems (4 weeks) Bartholow, Kenney, Peterson
Periods offered: All 4 quarters: 4, 8 or 12 weeks; full or half-time
Student limit: By arrangement
Prereq 2nd, 3rd, 4th year
Lectures, seminars, and clinical experience in treating individuals with sexual and/or marital problems.

341-E. Neurochemistry (4 weeks) Carver
Periods offered: Spring quarter; 4, 8, or 12 weeks; full time or half-time
Student limit: By arrangement
Prereq Biochem 310
A basic course in particular aspects of the chemistry of the central nervous system. The material will cover lectures of the subcellular units, metabolic compartments, and the regional distribution of chemical components. Current literature will be reviewed by the student and presented as part of the course content.

341-F. Psychopharmacology (4 weeks or by arr) Kaye
Periods offered: All 4 quarters: 4, 8 or 12 weeks; full time or half time
Student limit: By arrangement
Prereq By arrangement
Lectures, demonstrations, seminars with guided clinical experience in the area of psychopharmacology.

346-A. Office Psychiatry (5 q hr; 4 weeks or by arr) Peterson
Periods offered: All 4 quarters: 4, 8, or 12 weeks; full or half time
Student limit: 2 per 4-week period
Prereq 1st, 2nd, 3rd, 4th year
Lectures, seminars, demonstrations in individual and group psychotherapy and psychopharmacology with adult outpatients.

346-B. Hospital Psychiatry Practice NPI (5 q hr; 4 weeks or by arr) Bartholow
Periods offered: All 4 quarters: 4, 8, or 12 weeks; full or half time
Student limit: 8 per 4-week period
Prereq 1st, 2nd, 3rd, 4th year
Lectures, demonstrations, seminars at Nebraska Psychiatric Institute. Individual and group psychotherapy and psychopharmacology working in a hospital and community clinic.

346-C. Hospital Psychiatry Practice VAH (5 q hr; 4 weeks or by arr) Bartholow
Periods offered: All 4 quarters: 4, 8, or 12 weeks; full or half time
Student limit: 8 per 4-week period
Prereq 1st, 2nd, 3rd, 4th year
Lectures, seminars, demonstration at Veterans Administration Hospital. Individual and group psychotherapy and psychopharmacology experience. Includes working in an outpatient clinic and on a consultation service.

346-D. Alcohol and Drug Problems (5 q hr; 4 weeks) Blose
Periods offered: All 4 quarters: 4, 8, or 12 weeks; full or half time
Student limit: 2 per 4-week period
Prereq Clerkship in Psychiatry
346-E. Psychiatric Problems of Adolescents (5 q h cr; 4 weeks or by arr) Fix
Periods offered: All 4 quarters; 4, 8, or 12 weeks; full or half time
Student limit: 2 per 4-week period
Prereq 3rd, 4th year
Lectures, demonstrations, and seminars on adolescent problems. Clinical experience working with adolescents and their families and with other community agencies concerned with adolescents.

346-F. Psychiatric Problems of Children (5 q h cr; 4 weeks or by arr) Fine
Periods offered: All 4 quarters; 4, 8, or 12 weeks; full or half time
Student limit: By arrangement
Prereq 2nd, 3rd, 4th year
Lectures, demonstrations, and seminars. Clinical experience working with children, inpatients and outpatients, and their families. Experience with community agencies working with children.

346-G. Mental Retardation (5 q h cr; 4 weeks) Menolascino
Periods offered: All 4 quarters; 4, 8, or 12 weeks; full or half time
Student limit: By arrangement
Prereq 2nd, 3rd, 4th year
Lectures, demonstrations, seminars in mental retardation with clinical experience in evaluation and treatment methods. Work with community facilities for the retarded.

346-H. Psychosomatic Medicine (5 q h cr; 4 weeks or by arr) Bean, West
Periods offered: All 4 quarters; 4, 8, or 12 weeks; full or half time
Student limit: By arrangement
Prereq 1st, 2nd, 3rd, 4th year
Lectures, demonstrations, seminars, and clinical experience on the Liaison Service of the Nebraska Psychiatric Institute. Student will work with patients who have certain psychological and physical problems on the medical, surgical, obstetrics services of the University Hospital, and also, appropriate services of the Veterans Administration Hospital and the Douglas County Hospital.

348. Off-Campus Elective (5 q h cr; 4 weeks)
Periods offered: By arrangement
Student limit: By arrangement
Prereq 3rd, 4th year
Preceptorial clerkship or off-campus electives.

349-A. Research in Psychiatry (5 q h cr; 4 weeks or by arr) Ellingson
Periods offered: All 4 quarters; 8 or 12 weeks, full time only
Student limit: By arrangement
Prereq 1st, 2nd, 3rd, 4th year
Laboratory or clinical research under direction in selected areas or psychiatry and/or behavioral sciences.

Courses oriented toward graduate students in nursing, occupational therapy, and psychiatry—

254. Statistical Methods (2 q h cr) Innes
Prereq One semester of college mathematics or its high school equivalent
Descriptive and inferential uses of statistics in the mental health field. Selected parametric and nonparametric techniques will be included.

302. Developmental Psychology (2 q h cr per q—total 4)
Prereq 6 sem hrs in Psychology or Educational Psychology; open only to qualified students in the fields related to psychiatry and upon approval of the instructor.
A background of knowledge of normal development from birth to old age as a sound basis for understanding maladaptive behaviors. Consideration of cultural, emotional, social, and intellectual factors throughout childhood; adolescent behavior and development; various aspects of adjustment in young adulthood, maturity and old age.

304. Group Dynamics (2 q h cr) Garetz
Prereq Open only to qualified students in the fields related to psychiatry and upon approval of the instructor
Introduction to group dynamics; emphasis upon settings in which work with groups is practiced.

305. Activity Therapy Analysis (3 q h cr) Peck
Prereq Open only to qualified students in the fields related to psychiatry and upon approval of instructor
A psychodynamic approach to the analysis of activities used in psychiatric occupational therapy. The analysis of activities as they relate to creativeness, sociability, expression of hostility, compulsiveness, work tolerance, and work readiness.
307. Evaluation Techniques in Occupational Therapy (3 q h cr) Peck
Prereq Open to qualified students in the fields related to psychiatry and upon approval of the instructor
Varied methods of evaluating psychiatric patients are investigated with reference to performance of activities. Techniques of interviewing, taking histories, methods of observation, and testing in the areas of activity and perceptual motor dysfunction are considered.

350. Psychiatric Concepts (3 q h cr) Tunakan
Prereq Open only to qualified graduate students in an approved master's program
The historical development of concepts and attitudes of present-day psychiatric philosophy, treatment and diagnostic classifications is presented. The care and treatment of the psychiatric patient is correlated with dynamics of personality development and symptom formation.

353. Research Methods (2 q h cr) Hook
Prereq Open only to qualified graduate students in an approved master's program
Introduction to scientific methodology and thinking oriented specifically toward the needs of students in nursing and occupational therapy with regard to research and evaluative methods.

354. Interdisciplinary Communication in Psychiatry (1 or 2 q h cr per q, max 4) Eaton
Prereq Graduate standing in fields related to psychiatry and upon approval of instructor
Lecturers from the fields of psychiatry, clinical psychology, psychiatric social work, psychiatric nursing, and other related fields present their respective major contributions as related to formulation and application of psychiatric theory. Seminars relate to the current subject of discussion.

355. Basic Psychodynamics (2 q h cr per q, total 4) Starr
Prereq Graduate standing in the fields related to psychiatry and upon approval of the instructor
A review of personality development and the theory of interpersonal relationship from a psychoanalytic viewpoint. Inner psychological forces as well as external interpersonal forces are covered in order to understand normal and abnormal development of the personality. Patients are interviewed in order to demonstrate the theories of psychodynamics.

359. Seminar in Psychiatric Activity Therapy (2 q h cr per q, max 4) Peck
Prereq Open only to graduate students in occupational therapy in an approved master's program
The first quarter is a study of trends and principles in psychiatric occupational therapy. The role of occupational therapists in various aspects of an interdisciplinary setting is considered in relation to such areas as milieu therapy, community mental health, prevocational evaluation, communication processes, and supervision of staff and students. The second quarter consists of special studies by individual students in changing concepts of occupational therapy services.

360. Field Instruction in Psychiatric Occupational Therapy (8-12 q h cr, total 12) Peck
Prereq Open only to graduate students in occupational therapy
Supervised participation in clinics, community agencies, and psychiatric conferences and meetings. Patient contact, hospital conferences, and community contacts are provided for practice of skills and techniques discussed in the concurrent lectures of courses 307, 359, and 367.

366. Introduction to Group Therapy (2 q h cr per q, max 4)
Prereq Graduate standing and permission of the instructor
Lectures on group therapy. Directed observation and participation as a co-leader in psychotherapy.

367. Theories in Psychiatric Occupational Therapy (2 q h cr) Peck
Prereq Open to qualified students in the fields related to psychiatry and upon approval of the instructor
Current theoretical systems of treatment are studied in relation to treatment planning for psychiatric patients in the occupational therapy clinic. Various points of view are compared as bases for dynamic treatment, including growth and development, learning theory, ego, psychology, occupational and recreational development, work therapy, and social functioning.
RADIOLOGY 77

368. Clinical Child Psychology for School Psychologists (3 q h cr)
Prereq Graduate standing and permission of instructor
An advanced course in child psychology, with emphasis upon diagnostic classification, refinement of approaches and techniques of assessment, and correction of problem behavior in the school-age child. Although primarily designed to meet the needs of practicing school psychologists, information in this course would be of relevance in the field of psychiatry, child psychology, and special education.

370. Psychiatric Literature (cr arr)
Reading assignments in special areas; library reading and conferences.

372. Research Other Than Thesis (cr arr)

373. Master's Thesis (9-15 q h cr)

375. Doctoral Thesis (cr arr)

Radiology

Professors Wilson, Chairman, Meadows, Pederson; Associate Professors Dobry, James, Jones, Quaife, Saichek; Assistant Professors Adkins, Bolamperti, Bunting, Harned, G. Johnson, Mandel, Mundt, Novak, Thomson; Instructor Mulry; Assistant Instructor Dworak; Lecturer McMillan; Senior Consultants Hunt, McAvin.

The curriculum in Radiology aims to relate the physical and biological principles of radiation effects to the basic sciences and to the diagnosis, prevention, and treatment of disease.

The principles of radiology presented during the third quarter of the second year relate to radiation physics, radiobiology, principles of radiographic techniques and the interpretation of roentgenograms.

During the third year radiologic interpretation is continued by lectures and diagnostic conferences, and the principles of radiotherapy are presented. Sectional teaching to groups of four to eight students is conducted through film reading sessions, group conferences, and tumor clinics.

RADIOLOGY—76
Radiological Anatomy.—
Taught as part of Gross Anatomy

320. Principles of Radiology (II; 1 hr weekly, total 12)

346-A. Diagnostic Radiology (q h cr arr)
Periods Offered: Each 4 weeks; may be extended to 8 weeks in another Radiology Section
Student Limit: 8 in each section every 4 weeks
Daily sessions in film interpretation, fluoroscopic examination, special radiographic procedures, and correlation of radiographic anatomy, radiographic physiology and radiographic pathology in the evaluation of human diseases are to be carried out in the Department of Radiology. An introduction to radiation therapy and nuclear medicine is included in this elective.

346-B. Radiation Therapy
Periods Offered: Each 4 weeks; may be extended to 8 weeks in another Radiology Section
Student Limit: 4 in each section every 4 weeks
The student will be involved in radiotherapy evaluation of patients with cancer and observe the treatment of these patients by various radiation therapy techniques. Radiation therapy case presentation and lectures are planned on a weekly basis.

346-C. Nuclear Medicine
Periods Offered: Each 4 weeks; may be extended to 8 weeks in another Radiology Section
Student Limit: 4 in each section every 4 weeks
This elective is directed towards acquainting the student with the field of nuclear medicine. The application of nuclear energy to the diagnosis, treatment, and/or investigation of human disease is surveyed with emphasis on clinical applications. The students receive didactic instruction in the principles and practice of pertinent nuclear physics and instrumentation, participate in case evaluation, procedure selection, radionuclide dose calculation and administration, conduct of the procedure, subsequent evaluation and analysis of data with interpretation and formulation of consultative report. Follow-up patients with integration of the consultative report into the total patient care is stressed. Pertinent radiation biological and radiation considerations are related to the conduct of the routine individual interests within the overall framework of the elective.
78

College of Medicine

350. Advanced Diagnostic Radiology (4 to 8 q h cr) Hunt, Moore, Pederson, Wilson
Prereq Radiol 320, 330, 331
Responsible analyses of the status of the various tissues, organs, regions, and systems of the body through correlation of radiographic and fluoroscopic observations with anatomy, physiology, and pathology.

351. Dental and Maxillo-Facial Radiology (3 q h cr) (Dentistry 393, 2 cr) Bruce, Dobry, Jones, Quast, Simon, Smith, Wilson
A lecture and laboratory course which presents techniques and instrumentation suitable for dental and maxillo-facial radiology and reviews interpretation of normal and abnormal radiographic landmarks. The course follows the development of the normal landmarks from childhood to adult form.

352. Advanced Therapeutic Radiology (4-8 q h cr) Hunt, Pederson, Waggener
Prereq Radiol 320, 330, 331, 354, 355
Systematic consideration and responsible application of roentgen rays, radium and radioisotopes in the treatment of benign and malignant diseases involving the various organs and regions of the body.

353. Seminar (1 q h cr per q)

354. Radiological Dosimetry (2-8 q h cr) Jones, McMillan, Waggener
Prereq Radiol 320, and consent of department
Analysis of factors controlling the intensity, quality, distribution, absorption, and effects of radiation in phantoms, barriers, and tissues.

355. Radiobiology (2-8 q h cr) Hunt, Quaife
Prereq Anat 314, 315, Radiol 320, 354 and consent of department
Assigned laboratory projects and reading for analysis of basic biological effects of radiation on cells, tissues, and organisms.

356. Nuclear Medicine and Biophysics (2-8 q h cr) Hunt, Jones, Quaife, Schlichtemier
Prereq Radiol 320, 354 and consent of department
Laboratory assignment in nuclear technology and utilization of radioisotopes in basic medical science and in clinical procedures.

388. Master's Thesis (9-15 q h cr)

399. Doctoral Thesis (cr arr)

Surgery


The formal courses in surgery are offered in the junior and senior years. However, the faculty in surgery participates with other departments in a variety of interdepartmental exercises during the first two years. Correlation of the knowledge and precepts of non-clinical sciences with the problems displayed in patients who become the responsibility of surgeons is the major role of the Department in the first two years.

The primary clerkship in surgery is undertaken in the third year. During this period the manifestations and consequences of disease as encountered in patients are the focus. The principles of diagnosis, the implications and relation of basic sciences to disease and the application of surgical principles to the management of disease are stressed. Hospitalized patients and ambulatory patients contribute to this introduction to clinical surgery. Increased involvement with patients as part of the professional team is fostered by a series of electives for the third or fourth years. The electives are designed to build on the foundation of the third year clerkship for students favoring a career in general medicine or in any one of the related surgical fields. The technic for performing operations and the preparation for the practice of surgery require additional training and education after graduation. The Department of Surgery includes sections of Anesthesia, General Surgery, Neurosurgery, Oral Surgery, Pediatric Surgery, Plastic Surgery, and Thoracic and Cardiovascular Surgery.
Surgery.

330. Fundamentals of Clinical Science
The Department of Surgery participates with other departments in this inter- departmental, coordinated course. This clinical science course is organized to provide a common background of clinical information in a number of system and subject areas. All clinical science departments contribute to this series.

Clerkship for Juniors.

334. Junior Hospital Clerkship
This is the primary clerkship in surgery. Students examine, evaluate, and observe patients for whom they help care during the course of an illness. The clerkship is designed to develop skills and confidence in interviewing and examining patients. The application and evaluation of diagnostic procedures, the considerations of differential diagnosis, and the consequences of clinical decisions are emphasized in rounds, conferences and seminars with instructors. The students participate in operations, learning operating room techniques, observing the principles of operations, and correlating the operative findings with the clinical findings.

334. Junior-Senior Neuroscience Hospital Clerkship (Neurology 334)
This primary clerkship in neurology-neurosurgery is required during some four-week period of the junior or senior year.

Electives for Juniors and Seniors.

342. Elective Outpatient Clerkship (4 or 8 weeks)
The student participates in the care of ambulatory patients representing all areas of surgical care. Outpatient diagnostic and therapeutic procedures are included in the program which permits the student to observe the course of patients who are not hospitalized.

346. Elective Hospital Clerkships (Clinical Clerkships)
Designed to build on the foundation achieved in the junior clerkships. The student is an active participant in the professional team caring for patients. Professional communication, relation of the surgical problem to the basis of disease, the details and technic of diagnosis and treatment are the focus of increasing involvement with patients. Students can expect to acquire confidence in identifying problems, organizing a plan of approach, and conducting patients through the pre- and post-operative periods in conjunction with the faculty.

A. Anesthesia Clerkship (each 4 weeks)
Opportunity to gain understanding of preoperative evaluation and preparation of patients for anesthesia, clinical pharmacology of adjunctive drugs and anesthetic agents, respiratory physiology, principles of metabolic support of the patient undergoing an operation, principles of resuscitation, care of the unconscious patient, inhalation therapy, and approaches to control of pain.

B. General Surgery Clerkships (each 4 weeks, 4 or 8 weeks)
Affiliated hospitals: Bishop Clarkson Memorial, Immanuel, Nebraska Methodist, Omaha Veterans Administration. In-hospital clerkship supervised by designated active members of the faculty.

C. Emergency Medical Services (each 4 weeks)
Clerkship in emergency room activities where principles of emergency medical care are applied to acute problems of illness and injury.

D. Neurosurgery (each 4 weeks)
Elective clerkship in neurosurgery supplementing the required neuroscience clerkship.

E. Pediatric Surgery (each 4 weeks) Children's Memorial Hospital
F. Thoracic and Cardiovascular Surgery (each 4 weeks) University of Nebraska Hospital

348. Special, Elective Experiences in Surgery
Many members of the active faculty have indicated their willingness to share a preceptorial clerkship with a student. This involvement with surgeons of our faculty, in an active private practice in Omaha, Council Bluffs, Lincoln and Lincoln Veterans Hospital, or Kearney can be arranged with the members of the faculty selected and certified by the department. Bear in mind that each member of the faculty will set his individual student limit.
Special off-campus electives in other medical centers can be arranged for extraordinary learning experiences not regularly available within our assets. The Department of Surgery will be pleased to work with the student interested in an extramural clerkship when credit for this clerkship is desired.

A. Off-Campus Surgery
B. Off-Campus Anesthesiology
C. Off-Campus Neurosurgery

349. Research in Surgery
Length of approved time to be determined. In general, this type of experience favored for student who has identified a problem for which capacity and facilities exist to permit a fruitful period of study and effort.

A. Anesthesia
Opportunity to select an area of interest from aims of anesthesia clerkship for more intense study. Definition of problem and program of learning to be decided upon discussion with faculty in Anesthesiology. Limit by arrangement.

B. General Surgery
By arrangement with faculty.

F. Thoracic-Cardiovascular Surgery
By arrangement with faculty.

SURGERY, GENERAL EXERCISES.—

Surgery Grand Rounds (Every Saturday 10:00-11:30 a.m.)
Physicians in practice are cordially invited to attend.

Surgery Seminar (Wednesday, 4:30 p.m., July through June)
Presentation and discussion of subjects and articles related to surgery. Staff, residents, interns, and senior students.

GRADUATE COLLEGE COURSES.—

350. Advanced Surgery (Dental Oral Surgery 350) (6 q h cr per q, max 24) Musselman, Staff
Prereq Permission
Clinical assignments, conferences, and demonstrations applying the principles of surgery to the diagnosis and treatment of disease. Emphasizing the relation of anatomy, biochemistry, pathology, physiology, and microbiology to surgical problems.

361. Advanced Gross Anatomy (Anatomy 361, Dentistry 392) (3-10 q h cr) Holyoke, Pederson
Prereq Anat 310, 311, 312 or equivalent
Studies of general and special gross dissection of the human body.

368. Surgery Seminar (Dental Oral Surgery 368) (1 q h cr per q, max 9) Musselman, Staff
Prereq Permission
Seminar discussion of broad aspects of surgery. Forum for development and presentation of original work. Correlation with basic sciences, analysis of research, and discussion of interrelations between surgery and genetics, epidemiology, anthropology, economics, humanities, history, law.

369. Research Other Than Thesis (er arr) W. C. Davis, Hodgson, J. R. Jones, Musselman, Sellers, Skultety, Staff

398. Master's Thesis (9-15 q h cr)

399. Doctoral Thesis (er arr)

Urology

Associate Professor Francis Bartone, Chairman; Professor Leroy W. Lee, Vice Chairman; Associate Professors Kammandel, Malashock, Owens, Emeritus; Assistant Professors Lacy, Mardis; Assistant Professors Gartner, Synhorst; Clinical Assistant Professor Munger; Instructors Frank, Marchetti; Clinical Instructor Gilbert.

The fundamental principles of this surgical specialty are taught in close coordination with the general surgical teaching program. The educational experience is geared to the type of knowledge which is of value to the general physician. Proficiency in a general knowledge of urology is accomplished by coordinated study, including lectures, clinical clerkship, dispensary and operative clinics. Emphasis at all times is on methods of diagnosis and management of the patient with urological disease.
Aside from the undergraduate teaching, the members of this department provide instruction to interns, surgical residents and nurses. They also provide specialized urological care to patients in the University Hospital, Veterans Administration Hospital, and Douglas County Hospital. They conduct investigative research in various subjects of urological interest.

UROLOGY.—84

Junior Hospital Clerkship (credited under Surgery Clerkship)
Patients of interest are assigned to junior students on the surgery clerkship. Special emphasis is devoted to principles of diagnosis and treatment especially pertinent to Urology. Students participate in operations including transurethral surgery, and attempts are made to correlate operative findings with clinical findings, especially with urologic radiologic findings.

Ward Clinics (3 hrs weekly when on Surgery Clerkship)
Students are given bedside ward instruction using patients at the University Hospital and Veterans Administration Hospital, Omaha, to illustrate major urological diseases encountered in medical practice. A one hour seminar is given weekly where a review of urological problems is discussed in an informal small group.

330. Fundamentals of Clinical Science
The Department of Urology participates with other departments in this inter-departmental coordinated course. Basic core knowledge in clinical medicine is imparted by all clinical departments.

346. Elective Hospital Clerkship (Senior Year)
Designed to augment experience and knowledge gained in the junior year from lectures and clerkship, the student spends a four week period as a preceptor with one of three groups of urologists. He is exposed to all facets of urology from outpatient diagnostic evaluations to operations.

349. Research in Urology
Prereq Special permission
The student may elect to spend a period with Professors Lacy and/or Bartone in laboratory or clinical research in urology.
The Baccalaureate Program in Medical Technology at the University of Nebraska College of Medicine is designed to teach qualified students the theory and technics of laboratory procedure. The increasing use of clinical laboratory determinations in the diagnosis and care of the patient has led to great opportunities for employment and advancement in the profession of medical technology. Positions are available to the medical technologist in hospital laboratories, physicians' offices, clinics, research, teaching and industry. The medical technologist is an integral part of the medical team that strives for more rapid, complete, and accurate diagnosis and treatment of the patient.

For proper understanding of clinical laboratory procedures, it is essential that an adequate background of scientific information be obtained before entering this program.

Organization.—The course for medical technologists has been established by the Board of Regents in connection with the Department of Pathology, College of Medicine. It has been accredited by the Council on Medical Education and Hospitals of the American Medical Association and the American Society of Clinical Pathologists as being qualified to provide adequate training in laboratory technic. Graduates of the program are expected to take the examination for certification by the Registry of Medical Technologists, maintained jointly by the American Society of Clinical Pathologists and the American Society of Medical Technologists.

Facilities for Instruction.—The course is given in the University Hospital, and facilities of the University of Nebraska College of Medicine are available for instruction.

In 1968 the schools of Medical Technology at Bishop Clarkson Hospital and Nebraska Methodist Hospital became affiliated with the Medical Technology program at the University of Nebraska College of Medicine. The purpose of this affiliation is to provide a strong, combined academic program in medical technology and to provide for an increased enrollment of students in their fourth year from the University of Nebraska and the University of Nebraska at Omaha. Those students from each school who successfully complete the twelve-month course are granted the degree of Bachelor of Science in Medical Technology from the University of Nebraska College of Medicine.

The University Hospital is under the control of the Board of Regents, through the administration of the University of Nebraska Medical Center. It has a capacity of 265 beds and 46 bassinets and patients are accepted from all over the state. All types of diseases are treated under the direc-
tion of the faculty of the College of Medicine. More than 6,000 patients are admitted each year and over 85,000 visits are made annually to the University of Nebraska Outpatient Services. The total number of laboratory tests performed on all patients exceeds 350,000. Laboratory work includes all routine procedures and many specialized tests.

The library of the College of Medicine has books and periodicals available for study and for awareness of current work in the field of laboratory medicine.

**REQUIREMENTS FOR ADMISSION**

**High School.**—Sixteen high school units are required for admission. They must include 3 units in English, 2 units in one foreign language (ancient or modern), 2 units in mathematics (1 each of algebra and geometry or an equivalent) and 1 in science (biology, botany, chemistry, physics, or zoology).

**College or University.**—To insure adequate background and training for entering a recognized course in medical technology, the following requirements have been established in accordance with the Registry of Medical Technologists:

**BIOLOGIC SCIENCE.**—Sixteen semester hours. This must include one full academic year (two semesters) of general biology and/or zoology, including lecture and laboratory. A minimum of 3 semester hours of bacteriology or microbiology is required.

**CHEMISTRY.**—Sixteen semester hours including lecture and laboratory. This must include at least two semesters of general inorganic chemistry, lecture and laboratory, which may also include qualitative analysis. At least 4 semester hours of organic chemistry, including laboratory, must be completed. A course in quantitative analysis is highly recommended.

**NOTE:** For students taking their preliminary college work at the University of Nebraska in Lincoln various chemistry sequences not totaling 16 hours may also be accepted because of equivalency of course content.

**MATHEMATICS.**—A minimum of 1 semester of college mathematics is required.

**ENGLISH.**—A minimum of 6 semester hours of English is required.

**PHYSICS.**—A lecture and laboratory course in physics is recommended.

**ELECTIVES.**—Sufficient hours to total 90 semester hours of college credit. Emphasis is placed upon obtaining as broad a general educational background as possible in addition to the required courses listed above.

To insure successful completion of the year of clinical training, the student must present a minimum grade average of 2.5 on the 4.0 system. Grades of D and below from institutions other than the University of Nebraska are not acceptable for transfer.

Since the student has entered the program in Medical Technology with specific course requirements completed and a minimum of 90 semester hours of college work, he is granted the degree of Bachelor of Science in Medical Technology when he has successfully completed the program. The degree is granted by the University of Nebraska, College of Medicine. However, the student retains the option of receiving his degree from the institution at which he completed his preliminary work, if he prefers.
Loan Funds and Scholarships.—Loan funds and limited scholarships are available. The Freida M. Oltmann Loan Fund for Student Medical Technologists has funds for students beyond the second year at the University of Nebraska in Lincoln or in the training course in Omaha. This fund is administered by the Nebraska Society of Medical Technologists. Further information regarding loans and scholarships can be obtained from the Office of Scholarships and Financial Aids, Room 324 Conkling Hall.

Starting Date.—Students begin training during the summer months. Groups are accepted in June, July, August.

Applications.—Application forms and additional information can be obtained from the Education Coordinators of any of the three affiliated schools. Transcripts of both high school and college work must be submitted with the completed forms. Students are encouraged to apply at the end of the sophomore year, but the entire application file must be completed by March 1 of the year of planned entrance.

Enrollment in the program is limited. Students are encouraged to submit applications at the end of the sophomore year. All applications should be received by February 15 of the student's junior year.

Fees and Expenses.—A tuition fee of $250 a year for a resident student and $500 a year for a nonresident student is charged at the time of enrollment. This fee covers tuition, registration, student health, and diploma fees. Allowance should be made for the purchase of books. Students are responsible for their own maintenance. Adequate housing can be found near the campus.

PLAN OF INSTRUCTION

The course is twelve months in length. Lectures are designed to provide a sound theoretical basis for the understanding of laboratory tests. Conferences are held at frequent intervals for consideration of technics, their relation to disease processes, and possible sources of error. Oral and written examinations are given at regular intervals. Demonstrations are used to introduce new subject matter, to emphasize important points, and to familiarize the student with unusual problems. Videotapes are used to present detailed techniques to the class.

Courses and semester credit hours are arranged as follows:

LECTURES:

002. MEDICAL MICROBIOLOGY.—This course is a comprehensive study of the medical aspects of bacteriology, mycology, parasitology and immunology ........................................... 4 credits

003. CLINICAL BIOCHEMISTRY.—This course is designed to relate chemical laboratory procedures to the normal and abnormal chemical reactions of the human body ........................................... 4 credits

004. INTEGRATED HEMATOLOGY.—This course covers the general principles of blood examination for alterations in the cellular elements, including a discussion of the abnormal conditions which are indicated by laboratory results. Procedures designed to aid in the diagnosis of coagulation disorders are discussed. The theory of blood groups and transfusion as a sub-section on immunohematology is included .......................... 3 credits
005. **Clinical Microscopy.**—General aspects of analysis of urine, gastric contents and other body fluids are discussed..................1 credit

014. **Instrumentation.**—Theoretical principles and practical operation of laboratory instruments are presented. Specific instruments are used to demonstrate principles of spectrophotometry, electrophoresis, chromatography, and microscopy..................2 credits

015. **Professional Topics.**—An introduction to laboratory organization and management is presented, including principles of supervision and education ..........................................................1 credit

001. **Introduction to Clinical Laboratory Specialties.**—Basic concepts of radioisotopes, histologic technic, cytology, virology, and quality control are discussed..................1 credit

006. **Seminars in Medical Science.**—Principles of scientific investigation, including biostatistics, are presented, and students apply these principles to case reviews, journal reports, and individual scientific projects ..........................................................2 credits

**Clinical Services:**

In addition to the formal lecture material, the student is assigned to various services for practical laboratory experience. There are seventeen (17) service periods during the twelve month training program, and the division of time is indicated below. Part of the student's training is conducted in a formalized student laboratory located in the Basic Science Building.

007. **Chemistry.**—This service includes examination of blood and other body materials for chemical constituents. Such tests are usually quantitative. The student learns the proper use of equipment and develops accurate technic ..................6 credits (18 weeks)

008. **Hematology.**—Various tests for enumeration and detection of abnormality of the formed elements of the blood and tests for alteration of the coagulation mechanism of the blood are performed in this department ..................3 credits (9 weeks)

009. **Bacteriology, Mycology and Parasitology.**—The identification of micro-organisms, particularly pathogenic, by morphologic and cultural characteristics is undertaken in bacteriology. Parasitology includes the study of technics for isolation and identification of small animal forms capable of causing disease in man. Adequate demonstration material is maintained in the laboratory. This section of training is under the direction and supervision of the Department of Microbiology of the College of Medicine ..........3 credits (9 weeks)

010. **Seroogy.**—This course involves the measurement of immunologic processes by laboratory tests ..................1 credit (1½ weeks)

011. **Blood Bank Technic.**—Procedures for the handling and storage of blood, as well as preparation of blood for transfusion, are taught during this service. Methods for detection of incompatibility between bloods are emphasized ..................2 credits (6 weeks)
013. Urinalysis and Miscellaneous.—The student performs routine examinations of urine, gastric contents, and other body fluids. In addition, the performance of basal metabolic rate determinations is accomplished. 1 credit (3 weeks)

016. Elective: The student is assigned a period during which he can complete a research project, review a service in which he desires more experience, or undertake instruction in a laboratory specialty to which he would not otherwise be introduced 1 credit (3 weeks)

Additional Courses Available:

The Department of Pathology also offers a separate course in histologic technic. For further information on this program, contact C. A. McWhorter, M.D., Chairman, Department of Pathology.
MASTER OF SCIENCE IN PATHOLOGY
FOR MEDICAL TECHNOLOGISTS

ARDEN ENGSTROM LARSEN, Ph.D., M.T. (ASCP), Adviser

The graduate program in pathology for medical technologists is designed to provide advanced theoretical and practical education to the individual whose aim is to qualify for supervisory or teaching positions. The candidate is also required to design and complete an original research project.

PREREQUISITES: Graduate students admitted to the department may include medical technologists registered by the American Society of Clinical Pathologists who hold a Bachelor of Science degree from an accredited institution and whose qualifications are acceptable to the Pathology Department and the Graduate College. Preference will be given to applicants who have had some working experience. Ordinarily, an undergraduate grade point average of 2.8 on the 4.0 system is required for admission.

Organization.—The master's degree program in pathology for medical technologists may be completed only under Option One as published in the Graduate College catalog. Forty-five quarter hours must be completed with 30 to 36 of these hours constituting course work and the remaining 9 to 15 hours consisting of research and thesis.

The general courses to be completed by all candidates are:
1. Quality Control and Instrumentation—3 quarter hours.
2. Laboratory Supervision and Administration—2 quarter hours.
3. Educational Administration in Medical Technology—2 quarter hours.
4. Seminar—3 quarter hours.

At least one-half of course work, including thesis, must be in the Department of Pathology. Supporting courses may be drawn from the Departments of Microbiology and Biochemistry.

321. GENERAL PATHOLOGY.—(3 quarter hours per quarter for 3 quarters)
This course emphasizes the etiology and morphologic alterations produced by disease processes. It comprises the general principles of the reaction of the body to injury and of specific disease processes in detail by organ systems in both lecture and laboratory exercise.

331. CLINICAL PATHOLOGY.—(3 quarter hours)
Special emphasis is placed upon the selection of tests and the interpretation of the results of such tests, correlating these results with the clinical findings.

350. SUPERVISION AND ADMINISTRATION.—(2 quarter hours)
Principles and application of personnel relations, laboratory organization, laboratory budgets, ordering and purchasing of equipment, record keeping, employee interviews, hospital-laboratory relationships.

351. EDUCATIONAL ADMINISTRATION IN MEDICAL TECHNOLOGY.—(2 quarter hours)
An introduction to the duties of the teaching supervisor. Techniques of lecture presentation, use of audio-visual aids, grading, and examinations will be discussed. Selection and admission of students, counseling of students, preparations of students' lecture and laboratory assignments will be reviewed.
352. QUALITY CONTROL AND INSTRUMENTATION.—(3 quarter hours)
This course is designed to present the principles of operation, calibration, and maintenance of laboratory instruments. Principles of statistics as applied to laboratory control will be presented as well as techniques for insuring the accuracy and reproducibility of laboratory results.

353. COAGULATION AND BLOOD COMPONENTS.—(2 quarter hours)
This course will discuss the theory of blood coagulation, the clinical tests used to diagnose coagulation disorders and to follow therapy in patients with coagulation diseases. Also, the preparation of various blood fractions to be used therapeutically will be presented.

354. BLOOD BANK ADMINISTRATION.—(2 quarter hours)
This course is intended to acquaint the technologist with the responsibility of record keeping, blood replacement, and personal liability.

359. SEMINAR.—(1 quarter hour credit per quarter for 3 quarters)
Presentation by students of current topics relevant to the clinical laboratory.

361. ULTRASTRUCTURAL METHODS IN PATHOLOGY.—(4-8 quarter hours)
Technics of preparation of human biopsy specimens, experimental tissues, and virus material for electron microscopy. Theoretical and practical instruction in the operation of the electron microscope.

362. ULTRASTRUCTURE OF CELLS AND TISSUES.—(3 quarter hours)
Modern concepts of cellular ultrastructure, and correlation of structure with function of cells and tissues.

363. ULTRASTRUCTURAL PATHOLOGY.—(3 quarter hours)
Ultrastuctural aspects of diseased cells from patient and research tissues.

364. NON-THESIS RESEARCH.—(credit arranged)

365. ADVANCED HEMATOLOGY.—(1-4 quarter hours)
Lecture and laboratory course designed to review normal hematology and to introduce the student to new concepts. Abnormal morphology, blood disease and treatment covered in detail.

Graduate Fees.—Please refer to page 37.
A resident student who registers for less than 12 quarter hours will be charged $13.00 for each quarter hour registered.

Fellowships and Financial Aid.—Full-time graduate students may qualify for fellowships. For information, write to the Graduate College, University of Nebraska, Lincoln, Nebraska 68508. All applications for financial assistance must be received before March 1st of the year preceding that for which assistance is desired.

Full-time University employees may register for 6 hours of course work each quarter without charge.

A limited number of Allied Health Professions Traineeship Grants covering tuition, laboratory fees, and travel allowance, plus a stipend, are available. Please contact the Department of Pathology for further details.

Application Procedure.—Application forms and a Graduate College Bulletin may be secured from the Graduate College, University of Nebraska, Lincoln, Nebraska. Transcripts of all college work should be submitted to the Graduate College along with the completed application. Applications will be reviewed by the Graduate College and by the Department of Pathology. Notification of acceptance is issued by the Graduate College.
The training course for cytotechnologists at the University of Nebraska College of Medicine is designed to teach qualified students the theory and methods of examination of cytologic material obtained from various areas of the body. Cytotechnology is the microscopic examination of cellular material with special emphasis being placed on the identification of malignant and pre-malignant cellular changes. The primary source of material has been the uterine cervix; however, increasing amounts of material are obtained from the respiratory tract, gastrointestinal tract, body fluids, etc., for cytologic examination. The training course in cytotechnology is a one-year program. Upon satisfactory completion of the twelve-month program, the student is qualified for and expected to take the registry examination which is given by the Board of Registry of the American Society of Medical Technologists and the American Society of Clinical Pathologists. Upon certification by the Board of Registry, the student is qualified to work under the supervision of a pathologist in the processing and screening of cytologic material. Upon completion of the training period, a certificate is issued by the University of Nebraska indicating the satisfactory completion of 12 semester hours.

Requirements for Admission.—A minimum of 60 semester hours of college or university level work is required prior to admission. The 60 semester hours must include at least 12 hours in the field of biological sciences. Courses of this type should be both lecture and laboratory and should include courses such as general zoology, microbiology, embryology, histology, and genetics. The remaining 48 semester hours should be designed to provide a broad general educational background. A minimum grade average of C is required. Grades below C are not acceptable for transfer.

Fees and Expenses.—The tuition fee for residents of Nebraska for the training period is $60.00. The fee for nonresidents is $120.00.

Applications.—Application forms may be obtained on written request to the Director.

Starting Date.—The program is offered yearly beginning June 1.
DIVISION OF PHYSICAL THERAPY
ALLIED HEALTH PROGRAMS

MARY ELLEN SACKSTEDER, B.S., M.A., R.P.T.
Assistant Professor and Director

JAMES P. TOLLMAN, M.D., Professor
Director of Allied Health Programs

GERALDINE BOLINGER, B.S., R.P.T.
Instructor in Physical Therapy

The baccalaureate degree program of the Division of Physical Therapy of the University of Nebraska College of Medicine is designed to provide the theory and practical education which will prepare physical therapists to function as members of the health team; to contribute to the well being and restoration of health of the patient with professional skill and sympathetic understanding; and to provide the basis for fulfilling supervisory, administrative, and teaching responsibilities; for developing research activities; and for pursuing graduate study in allied fields. The changing patterns of medical care, the increased survival rate of patients and the increased life expectancy of our population are making greater demands for physical therapy services, have created new categories of personnel who are trained and supervised by physical therapists, have promoted changes in our curricula, and have increased the emphasis which is placed upon the leadership qualifications of the candidates for our educational programs. Employment opportunities are diverse and almost unlimited for physical therapists in hospitals and rehabilitation centers, with public health agencies and extended care centers, with schools and state institutions, in private practice, and as educators with college and university programs.

The essential qualifications for a career in physical therapy are academic achievement, a sincere interest in the sciences and the medical field and in the welfare of man, good health, emotional stability, tact, personal integrity, willingness to accept responsibility, and skills in communication and leadership.

ORGANIZATION

The Division of Physical Therapy is established with the Programs of Allied Health of the College of Medicine. The curriculum is designed to meet the accreditation standards of the Council on Medical Education of the American Medical Association and the American Physical Therapy Association. It is approved by the State Department of Education. Graduates are expected to become licensed by examination to practice in this or in other states, and to become associated with their professional organizations.

FACILITIES FOR INSTRUCTION

The facilities of the University of Nebraska College of Medicine are used for the teaching of the lecture and laboratory classes. The clinical education is provided by the hospitals and rehabilitation centers which are affiliated with the university.

The Regional Medical Library, located in the University of Nebraska Medical Center, provides rich resources for learning and for research in its excellent selection of texts and journals.
REQUIREMENTS FOR ADMISSION

High School.—A strong college preparatory program which includes one unit in each of the sciences (biology, chemistry, and physics) and two units of mathematics is recommended.

College or University.—By the intended date of enrollment, applicants will have successfully completed a minimum of 64 semester hours (96 quarter hours) of academic courses at an accredited college or university. Applicants should present a minimum quality point average of 2.5 on a 4.0 grading scale, and a minimum grade of C in the required courses. Grades below C are not accepted in transfer to the University of Nebraska. An interview with the Division of Physical Therapy Admissions Committee is required.

Applicants are required to present College Entrance Examination Board scores. R6896 is the score reporting number for the Medical Center and should be used on all CEEB forms and applications. Satisfactory scores (over 900) on the Scholastic Aptitude Tests of the CEEB are required.

The prerequisite courses and their minimal requirements of semester hours of credit are in accordance with the standards established on accreditation by the Council on Medical Education of the American Medical Association and the American Physical Therapy Association. They are academic preparation for the curriculum in physical therapy. Candidates must have satisfactorily completed the following college courses before the summer of their intended year of enrollment:

**Biologic Science.**—Eight semester hours minimum of lecture-laboratory courses. It is recommended that these include one semester in comparative anatomy/vertebrate zoology.

**Chemistry.**—Eight semester hours minimum of lecture-laboratory courses. It is recommended that these include at least one course in organic chemistry.

**Physics.**—Six semester hours minimum of lecture-laboratory courses. (Physical science does not fulfill this requirement.)

**Mathematics.**—Three semester hours minimum. Calculus is recommended.

**English.**—Six semester hours minimum. English composition is the recommended selection.

**Psychology.**—Six semester hours minimum.

**Electives.**—Students are urged to choose electives from the humanities and social sciences. Courses in sociology, speech, logic, foreign languages and an introduction to statistics are suggested electives.

**Financial Assistance.**—Information concerning financial assistance may be obtained by writing to the Office of Scholarships and Financial Aid, University of Nebraska College of Medicine, Medical Center, 42nd and Dewey Avenue, Omaha, Nebraska 68105, and to the American Physical Therapy Association, 1156 15th Street N.W., Washington, D.C. 20005, for the pamphlet "Sources of Financial Assistance for Physical Therapy Students." A Physical Therapy Student Loan Fund with the University Foundation has been established by the Nebraska Chapter of the American Physical Therapy Association to provide emergency loans in limited amounts for educational purposes.
Fees and Expenses.—The tuition for a resident of Nebraska is $350 per year. Nonresident tuition is $700 per year. The sum covers registration, student health, and diploma fees. It is estimated that books and clinic uniforms will cost an additional $200 per year. Students are responsible for their own room and board arrangements. Comfortable rooms are available near the Medical Center for about $50 per month and board is approximately $25 to $30 per week. Students rooming together spend slightly less than these estimated amounts. The final sixteen weeks of clinical internship in the second year of the program may increase these estimates for living expenses.

Starting Date.—Students who are accepted in the program are enrolled in the summer quarter which begins on July 6.

Continuation in Program.—The student must earn the minimum of C in the physical therapy courses of the curriculum and maintain an average of C+ (2.5) to insure successful completion of the program. The faculty reserves the right to recommend the withdrawal of a student whose health or scholastic standing make it inadvisable for him to remain in the program, or who is unable to meet acceptable standards of professional practice.

Applications.—Application for admission to the Division of Physical Therapy program should be made no later than February 1 preceding the summer of expected enrollment. Application forms are obtained by writing to: Director, Division of Physical Therapy, University of Nebraska College of Medicine, 42nd and Dewey Avenue, Omaha, Nebraska 68105.

Enrollment in the program is limited and predetermined. Students are encouraged to apply in the fall preceding the summer of their intended enrollment. Applications are not accepted after February 1.

PLAN OF INSTRUCTION

The program requires most of two full years of study and is taught on the quarter system. The courses in the sciences are taught by faculty of the College of Medicine. The theory and procedures courses are taught by faculty of the Division of Physical Therapy and are correlated with clinical education. The Division reserves the right to adapt the curriculum progressively to advancements in the health sciences.

JUNIOR YEAR

ANATOMY 310. (Co-listed with Anatomy)
A lecture, laboratory, dissection study of gross human anatomy including the neuromusculoskeletal, cardiovascular, respiratory and organ systems. Taught by Department of Anatomy.

PT 160. FUNCTIONAL ANATOMY
A lecture, demonstration, laboratory study of muscle function, joint range of motion, and goniometry. Taught by Division of Physical Therapy.

PHYSIOLOGY 310. (Co-listed with Physiology)
Cellular Physiology and Biophysics.
Lecture, laboratory, demonstration and conference instruction in general cellular physiology and biophysics; cell membrane electrophysiology; basic mechanisms of membrane transport, excitation, inhibition, conduction, synaptic transmission and contraction.
PT 161. PHYSIOLOGY OF THE HANDICAPPED
A lecture and seminar course dealing with the patient's reactions to physical disability; prosthetic, orthotic, and assistive devices and disfigurement. Taught by Department of Pediatrics.

PT 162. ORGANIZATION AND ADMINISTRATION
A lecture and seminar course with instruction in background and development of the profession, professional ethics, commitment to the profession, basic concepts of administration, legal aspects of practice, and current legislation; professional responsibility; role as educators. Taught by Division of Physical Therapy.

PT 171. THEORY AND PROCEDURES OF PHYSICAL THERAPY I
An introductory lecture and laboratory course including instruction in the physiologic effects of heat, cold, light, sound and massage, and the rationale for the use of these agents and method of application. Taught by Division of Physical Therapy.

NEUROSCIENCE 311. (Co-listed with Anatomy and Physiology; Interdepartmental 314)
Neuropathology—Neurophysiology
An interdepartmental course taught conjointly by staff from the Departments of Anatomy and Physiology and Biophysics. The structure and function of the peripheral, autonomic, and central nervous systems, with clinical correlation.

PT 172. THEORY AND PROCEDURES OF PHYSICAL THERAPY II
A lecture, laboratory and demonstration course correlated with clinical education and experience. Theory of and rationale for the use of electricity in testing and treatment procedures for patients with neuromuscular dysfunction; evaluation procedures and rationale of treatment for patients with respiratory and cardiovascular dysfunction. Taught by Division of Physical Therapy.

PT 173. THEORY AND PROCEDURES OF PHYSICAL THERAPY III
A lecture, laboratory, and demonstration course correlated with clinical education. Methods of evaluation of movement disorders; planning physical therapy programs to improve mobility and independent function; selective use of assistive and supportive devices. Taught by Division of Physical Therapy.

PHYSIOLOGY 312. (Co-listed with Physiology)
Systems Physiology
Lecture, laboratory, demonstration and conference instruction in the function of the respiratory, cardiovascular, renal, endocrine and gastrointestinal systems. Taught by Physiology.

SENIOR YEAR

PT 181. CLINICAL MEDICINE I
Lecture instruction in the medical specialties of internal medicine, pathology, and radiology. Includes injury and disease and treatment. Taught by physicians.

PT 182. CLINICAL MEDICINE II
Lecture instruction in the medical specialties of orthopedics and general surgery. Includes injury, disease, and treatment. Taught by physicians.
PT 174. THEORY AND PROCEDURES OF PHYSICAL THERAPY IV
A lecture, laboratory, and demonstration course correlated with clinical education. Methods of evaluation and treatment of patients with neuromusculoskeletal dysfunction due to abnormal development, disease, or injury; proprioceptive neuromuscular facilitation methods. Taught by Division of Physical Therapy.

PT 175. THEORY AND PROCEDURES OF PHYSICAL THERAPY V
A lecture, laboratory, and demonstration course correlated with clinical education. Continuation of PT 174; patient evaluation and treatment by neurophysiologic principles. Taught by Division of Physical Therapy.

PT 176. THEORY AND APPLIED SCIENCE OF PROSTHETICS AND ORTHOTICS
A lecture, laboratory, and demonstration course presenting bases for selection, evaluation, and use of prosthetic and orthotic devices; applied neurophysiologic principles of splinting and bracing. Taught by Division of Physical Therapy.

PT 183. CLINICAL MEDICINE III
Lecture instruction in the medical specialties of pediatrics and psychiatry. Includes normal motor development, childhood disease and treatment; emotional and social development, neuroses, psychoses, motivation for recovery and rehabilitation. Taught by physicians.

PT 184. CLINICAL MEDICINE IV
Lecture instruction in the medical specialty of physical medicine and rehabilitation. Includes team approach to treatment of disability; community resources available to assist maximum recovery and adjustment. Taught by physicians.

PT 190. SENIOR CLINIC IN PHYSICAL MEDICINE AND REHABILITATION
Correlative clinical instruction through patient presentation. Evaluation and treatment planning for specific disabilities. Taught by physician.

PT 191. INTRODUCTION TO RESEARCH METHODS
A lecture course presenting principles of scientific research. Designing of research studies correlated with clinical education. Taught by Division of Physical Therapy.

PT 192. INTRODUCTION TO TEACHING AND SUPERVISION
A lecture course presenting methods of teaching and supervision for physical therapists. Designing and conducting programs correlated with clinical education. Taught by Division of Physical Therapy.

PT 193. SENIOR SEMINAR AND INDIVIDUAL STUDY
A lecture and seminar designed to encourage individual study in specialized areas within physical therapy. A major paper will be written as part of the course credit. Taught by Division of Physical Therapy.

PT 194. CLINICAL INTERNSHIP
Full-time clinical education experience in general hospitals and rehabilitation centers, and in areas of specialization if desired. Continues for a period of 16 weeks.
TRAINING COURSES FOR RADIOLOGIC TECHNOLOGISTS

WILLIAM J. WILSON, M.D.
Foundation Professor and Chairman, Department of Radiology
HOWARD B. HUNT, M.A., M.D.
Professor of Radiology, Senior Consultant
PAUL M. MEADOWS, M.D.
Eppley Professor of Radiotherapy
Director, Eppley Radiation Center
ERNEST O. JONES, Ph.D.
Associate Professor of Radiology
MERTON A. QUAIFE, M.D., M.S.
Associate Professor of Radiology
Director, Nuclear Medicine
CHARLES A. DOBRY, M.D.
Assistant Professor of Radiology
ROGER K. HARNED, M.D.
Assistant Professor of Radiology
JAMES M. THOMSON, M.D., M.S.
Assistant Professor of Radiology
JOHN G. Mc MILLAN, B.S., M.A.
Consultant in Radiation Physics
CAROL DWORAK, B.S., R.T.
Assistant Instructor in Radiology
DOUGLAS McDONNELL, R.T., (ARRT) (ASRT)
Technical Director, Radiologic Technology Program
MICHAELA ANN WASINGER, R.T., (ARRT) (ASRT)
Chief Technologist
JOHANNA M. MORRELL, R.N., R.T.
Radiotherapy Nurse

Organization.—The program for training of radiologic technologists allows flexibility in the course of study to be pursued. The program will lead to either a) a Certificate of Radiologic Technology, b) an Associate Degree in Radiologic Technology or c) a Bachelor of Science Degree in Radiologic Technology.

The course of study for certification in radiologic technology is approved by the Council on Medical Education of the American Medical Association and by the American Registry of Radiologic Technologists. Graduates of the Certificate, the Associate Degree, and the Bachelor of Science in Radiologic Technology Program are eligible for examination by the American Registry of Radiologic Technologists, which grants eligibility to the title of Registered Technologist upon successful completion of the examination.

The Associate Degree is conferred upon those graduates of the program who have taken their two years of radiologic technology training at the University of Nebraska College of Medicine and in addition have completed 12 college hours (6 hours of English, 3 hours of psychology, and 3 hours of electives). Four months of additional experience in intermediate radiologic technology is also a requirement. The Associate Degree is not offered to those students who have completed their training for certification as a radiologic technologist at another institution.
The Bachelor of Science Program is composed of the basic training for certification as a radiologic technologist with additional training in advanced radiologic technology, radiation physics, and supervisory radiologic technology and 60 hours of college credit as listed in the section on curriculum.

Facilities for Instruction.—Basic science instruction is provided by the Departments of Anatomy, Physiology, and Radiology at the College of Medicine. Instruction and experience in radiologic technology are provided in the Department of Radiology of the University of Nebraska Hospital. Facilities are provided for experience in all usual and most special radiographic procedures through supervision by the radiologists and the senior radiologic technologists. Facilities are provided for experience in radiotherapy and radioisotopic procedures. All students and staff members are routinely monitored and carefully protected against exposure to radiation. The libraries of the College of Medicine and of the Department of Radiology are available for reference. Students are eligible to attend seminars, conferences, and convocations held on the Medical Center campus.

Requirements for Admission.—An applicant for admission to the course in radiologic technology must be in good health with no disability and be a graduate of an accredited high school. Preference is shown to those applicants with a balanced program including English, chemistry, physics, biology, typing, and secretarial work, although applicants will be considered who do not present credits in all such subjects.

Candidates for the B.S. Program are required to complete 60 semester hours of college credits at the University of Nebraska at Omaha including 10 hours of chemistry, 8 hours of physics, and an additional 6 hours of radiation physics, 6 hours of English, and 10 hours of biology. Collegiate courses in psychology, business administration, and education are recommended since the degree graduates are in demand as teachers of radiologic technology in medical schools and as supervisors in hospitals.

The completed application should be accompanied by a transcript of all high school and college credits, a photograph, and the names and addresses of two people from whom references can be obtained. Admission is allowed in June. Applications should be sent to the Technical Director, Radiologic Technology Program, Department of Radiology, University of Nebraska College of Medicine, 42nd & Dewey Avenue, Omaha, Nebraska 68105. Application forms will be provided on request.

Fees and Expenses.—The tuition fee is $150 for a resident of the State of Nebraska and $280 for a nonresident. Tuition is payable when classes start in June. A $50 deposit is required at the time of acceptance, returnable to the applicant only under extenuating circumstances. Tuition fee covers registration, student health, and diploma fees as well as tuition. Students maintain themselves and provide their own uniforms. Cost of textbooks is about $100. Board is available in the vicinity of the hospital. In the second year a stipend is available for the six students with superior scholastic records. Loan funds are available to students in training as technologists through the University Foundation. Information concerning loans can be secured from the Office of Scholarships and Financial Aids, Room 324 Conkling Hall.

General Information.—All students are accepted on a probationary basis during the first six months of training. Students are in class or on duty in the Department of Radiology a total of 40 hours per week.
Night call is taken on rotation during the second year. A vacation of two weeks is allowed either during the summer or at other arranged times. No vacations are allowed during the normal class schedule. A general physical examination and immunization against diphtheria, typhoid fever, and small pox are provided by the Student Health Service.

**Curriculum.**—The course of training for students in radiologic technology consists of lectures, demonstrations, and supervised experience. When not in class the student works with the staff technologists in the conduct of various types of radiologic procedures. Gradually increasing responsibilities are assigned to students as their competence increases. During the two years in training the student participates personally in all activities by scheduled rotation through all divisions in the Department of Radiology.

**Certificate in Radiologic Technology**

The following courses are required for candidates for the Certificate in Radiologic Technology:

<table>
<thead>
<tr>
<th>YEAR ONE</th>
<th>YEAR TWO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course No.</td>
<td>Course Title</td>
</tr>
<tr>
<td>001</td>
<td>Anatomy</td>
</tr>
<tr>
<td>002</td>
<td>Physiology</td>
</tr>
<tr>
<td>004</td>
<td>Office Procedures</td>
</tr>
<tr>
<td>005A</td>
<td>Physics</td>
</tr>
<tr>
<td>010</td>
<td>Medical Nomenclature</td>
</tr>
<tr>
<td>006A</td>
<td>Radiographic Technique</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>28</strong></td>
</tr>
</tbody>
</table>

**Associate Degree in Radiologic Technology**

The following courses are required for candidates for the Associate in Radiologic Technology degree: The course requirements listed above for candidates for certification in radiologic technology with the addition of:

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>College English</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Introduction to Psychology</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>006C</td>
<td>Special Procedure Radiographic Technique</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Curriculum for Bachelor of Science in Radiologic Technology**

A. Advanced credit for training in radiologic technology
Advanced credit granted on basis of qualification by passing standard examinations at University of Nebraska Department of Radiologic Technology following completion of training at the University of Nebraska or other comparable school approved by the Council on Medical Education of the AMA. (56 credits)

B. First twelve-month period

<table>
<thead>
<tr>
<th>UNIVERSITY OF NEBRASKA AT OMAHA</th>
<th>Credit</th>
<th>COLLEGE OF MEDICINE</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English or Public Speaking</td>
<td>6</td>
<td>005D Advanced Radiation Physics</td>
<td>6</td>
</tr>
<tr>
<td>Physics</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychology</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>10</td>
<td><strong>Total</strong></td>
<td>28</td>
</tr>
</tbody>
</table>
Courses for candidates in radiologic technology and radioisotopic technology are indicated below. Qualified special students enrolled in nuclear medicine technology at the Omaha Veterans Hospital receive university credit for specified courses but no certificate is granted to such special students by the University of Nebraska College of Medicine. Credits are expressed in semester hours.

001. ANATOMY.—Lectures, class recitations, demonstrations, and laboratory work dealing with the structure of the human body. Preserved specimens and fresh animal specimens are used for study. 4 cr. hrs.

002. PHYSIOLOGY.—Lectures, demonstrations, and laboratory dealing with the functions of the human body. Required of B.S. candidates. 4 cr. hrs.

003. PRINCIPLES OF RADIOLOGY.—The general principles of radiation, technic, contrast media, and various diagnostic procedures are presented together with the basic principles of X-ray and radium therapy. Lectures include professional ethics. 2 cr. hrs.

004. OFFICE PROCEDURES.—Supervised experience covering filing, cross indexing of diagnoses according to the Standard Nomenclature of Disease, vocabulary training, and transcription of radiological reports. 1 cr. hr.

5A. BASIC RADIATION PHYSICS.—Production, characteristics, and control of radiation as applicable to radiographic technic and radiotherapy. 3 cr. hrs.

5B. RADIOISOTOPIC PHYSICS.—Theory of atomic and nuclear structure, concepts of matter, natural and artificial radioactivity. (Required of candidates for certification in radioisotope technology and for B.S. in radiologic technology.) 1 cr. hr.

5C. HEALTH PHYSICS.—Lectures, laboratory, and supervised training in monitoring and personnel safety measures, application of federal and other regulations, and radioisotope accountability. (Required of candidates for certification in radioisotope technology.) 1 cr. hr.

5D. ADVANCED RADIATION PHYSICS.—Advanced radiation physics to include nuclear medicine, high energy particle physics, and advanced diagnostic radiographic physics. 6 cr. hrs.

6A. ELEMENTARY RADIOGRAPHIC TECHNOLOGY.—Demonstrations of anatomical positioning and adaptation of radiographic exposure to the more common radiographic examinations. 10 cr. hrs.

6B. INTERMEDIATE RADIOGRAPHIC TECHNOLOGY.—Supervised application of above principles by the student in the conduct of routine radiographic procedures. 20 cr. hrs.
6C. SPECIAL PROCEDURE TECHNOLOGY.—Supervised technical participation in neuroradiology, angiocardiology, selective angiography, and planigraphy. 6 cr. hrs.

6D. ADVANCED RADIOLOGIC TECHNOLOGY.—Continued application of current advances in radiographic technology including special procedures, tomography and standard radiographic techniques. 8 cr. hrs.

6E. SUPERVISORY RADIOLOGIC TECHNOLOGY.—Techniques in management of a radiographic department, personnel management, and equipment of maintenance and procurement. 4 cr. hrs.

7A. RADIOTHERAPEUTIC TECHNOLOGY.—Demonstration of types of diseases to which radiotherapy is applicable and of their treatment by X-ray, telecobalt, radium, and other radioactive agents. 5 cr. hrs.

7B. ADVANCED RADIOTHERAPEUTIC TECHNOLOGY.—Extended experience in radiotherapeutic technology, seminars in clinical radiation dosimetry and radiobiology, participation in tumor follow-up and registry. (Open to graduate technologists and graduate nurses who, on completion, qualify for national examination and certification as Radiotherapeutic Technologist.) 5 to 30 cr. hrs.

8A. BASIC NUCLEAR MEDICINE TECHNOLOGY.—This course consists of supervised applied nuclear medicine technology. The educational environment is in the active clinical Nuclear Medicine Service. The student is an active participant in the planning and execution of the technologic aspects of the nuclear medicine procedure. Special attention is given to the application of theoretical concepts of nuclear instrumentation and detection to the assessment of the pathophysiology of disease. The ultimate goal of this course is a graded increase in responsibility and independent functional capability to obtain accurate information for the analysis of the physician rendering the nuclear medicine consultation. The focal point of this course is the patient, thus aspects of patient handling and care relating to the technological procedures in nuclear medicine are stressed.

8B. BASIC NUCLEAR INSTRUMENTATION AND DETECTION.—This course consists of three clock hours of lecture per week with three clock hours of laboratory and/or demonstration per week. The course structure is generally categorized into physical principles covering structure of the atom, radioactivity, nuclear reactions, interaction of radiation and matter, sources of radiation and modes of radioactive decay and radionuclide dose calculation; principles of radiation biology, covering the biological effects of ionizing radiations; principles of radiation protection surveying control guidelines, waste disposal, and contamination control, as well as radiation detection instrumentation in health physics; and principles and practice of measurement of radioactivity involving instrumentation and detection system. 5 cr. hrs.

8C. ADVANCED NUCLEAR INSTRUMENTATION AND DETECTION.—Clinical: This course follows the basic course outlined above. It consists of 3 clock hours of lecture and 3 clock hours of laboratory and/or demonstration per week. The structure of the course initially reviews the basic physical aspects of nuclear medicine, measurement of radioactivity, radiation protection, and radiopharmaceuticals. The major amount of the course is allocated to an organ-system approach surveying nuclear medical procedural application in each area. The general format covers relevant
anatomic and physiologic as well as pathologic aspects, with the applications outlined in areas of dynamic function, volume-dilution, visualization, and localization; and therapeutic use of radionuclides. 5 cr. hrs.

8D. Neutron Activation Analysis.—Lectures and supervised laboratories utilizing the Triga nuclear reactor, radiochemistry laboratory, and multichannel analyzer for microanalysis of trace elements at the Omaha Veterans Hospital. (Elective by candidates for B.S. degree or for certification in radioisotopic technology.) 2 cr. hrs.

8E. Advanced Nuclear Instrumentation and Detection.—Research: This course offers advanced study in research applications of radionuclides. The course consists of 3 clock hours of lecture and 3 clock hours of laboratory and/or demonstration per week. The structure is oriented toward augmentation of basic and applied skills in nuclear medical technology oriented toward investigative applications. Techniques of liquid scintillation radiometric assay of longer half-lived radionuclides such as $^3$H and $^{14}$C are stressed along with other appropriate nuclides. The basic theoretical aspects and special problems of applying this modality within experimental design will be covered. 5 cr. hrs.

Opportunities.—There is an increasing demand for qualified technologists primarily in the departments of radiology in hospitals and in the offices of doctors specializing in radiology. Nuclear medicine technologists find opportunities both in nuclear medicine and in research laboratories. There is no opportunity for independent operation of a radiologic laboratory by the technologist since the use of radiation in the diagnosis and treatment of disease is legally the practice of medicine and in the interest of public welfare must be carried out under the supervision of a licensed physician.
The Department of Preventive Medicine, through the Division of Community Health of the University Health Center, Lincoln, and Teachers College, Lincoln, offers a four-year undergraduate curriculum leading to the degree of Bachelor of Science in Secondary Education with a teaching endorsement in health education. This program provides for a basic broad education coupled with opportunity to gain specific skills, techniques, and philosophy of present-day education and the necessary foundations in the biological and social sciences needed to conduct effective health education programs.

The increasing recognition of education as a technique of preventive medicine and the opportunities available in the formal educational process for quality health instruction has led to a large increase in school and community health education programs. The thrust for relevancy in education has increased awareness of the need to provide students at all levels of the educational system with knowledge and skills necessary to make intelligent health related decisions. Current concern for public involvement in health planning makes it even more important that the public be informed in health related matters. The present-day problems of mental health, drug abuse, accidental deaths, infant and maternal health, air, water, and noise pollution and the utilization of the medical care delivery system illustrate areas of concern which can be affected by health education programs.

Requirements for the Degree of Bachelor of Science and the Nebraska Teacher's Certificate with the Health Education Endorsement

GENERAL REQUIREMENTS:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. English Composition</td>
<td>6</td>
</tr>
<tr>
<td>2. Humanities</td>
<td>9</td>
</tr>
<tr>
<td>Selections will usually be made from at least two fields. Not less than 6 hours will be chosen from (a) the historical, critical, theoretical courses in Art, Dance, Music, Speech and Dramatic Art, Philosophy, Religion, and Literature (English language or foreign language). The remaining hours may be selected from (b) other courses in Art, Dance, Music, Speech and Dramatic Art.</td>
<td></td>
</tr>
<tr>
<td>3. Physical Education, Military, Naval, or Air Sciences</td>
<td>4</td>
</tr>
<tr>
<td>Credit in Physical Education practice courses is limited to one hour per semester except for professional students. Movement fundamentals and swimming are required activities for women.</td>
<td></td>
</tr>
<tr>
<td>4. Social Sciences</td>
<td>9</td>
</tr>
<tr>
<td>Selections will usually be made from at least two of the following: Anthropology, Economics, Geography, History, Political Science, Psychology, or Sociology.</td>
<td></td>
</tr>
<tr>
<td>5. Science</td>
<td>6</td>
</tr>
<tr>
<td>Selections may be made from two of the following laboratory sciences: Biology, Botany, Chemistry, Geography (61 and 62), Geology, Physics, Zoology, Public Health (11 and 12), and Microbiology.</td>
<td></td>
</tr>
</tbody>
</table>
6. Choice

Selection will be made from one of the following options:

A. Foreign Language

B. Science (in addition to area 5)

C. Mathematics

D. Humanities (in addition to area 2a)

Social sciences (in addition to area 4)

7. Elective

To be chosen from groups 1, 2, 4, 5, and 6.

* (Note: Option of the adviser)

PROFESSIONAL REQUIREMENTS:

1. Educational Requirements

   History and Philosophy of Education (3 hrs), Educational Psychology (6 hrs),
   Secondary Education (6 hrs), Student Teaching (6-10 hrs).

2. Health Education Requirements (45-46 hours)

   A. Public Health (21 hrs).
      PubHlth 01 (3 hrs), 12 (3 hrs), 70 (3 hrs), 140 (3 hrs), 150 (3 hrs), 151 (3 hrs),
      160 (3 hrs).
   B. Science (24 or 25 hours)
      Biol 01 (4 hrs); Zool 10 (4 hrs), 143 (4 hrs); Microbio 112 (3 hrs), 114 (1 hr);
      Chem 15, 16, 18 (3 hrs each) or Chem 11, 12 (4 hrs each).
   C. Electives (11-16 hours)

COURSE OFFERINGS

01. Elements of Health Promotion (3 cr)
   Study of normal and abnormal body processes for promotion of health, including
   such critical health issues as alcohol, dangerous drugs, sex education, consumer
   health, mental health, and disease control.

11. Personal and Community Health (3 cr)
   An introduction to the basic functions of the human body which, integrated
   with knowledge of the fundamental principles of the more common health
   problems, should give the student an insight into the overall meaning of health
   (personal).

12. Principles of Community Health (3 cr)
   Prereq PubHlth 01
   Study of basic principles involved in promotion of community health, e.g.,
   organization and administration of public health services, epidemiology, health
   education, and biostatistics.

30. Problems in Health Education (1-6 cr)
   Prereq PubHlth 01 and 12, or permission of the department

70. Emergency Health Care (3 cr)
   Study of underlying structure and functions basic to emergency care, and
   specific techniques for their care.

140. Principles of Environmental Health (3 cr)
   Prereq PubHlth 01 or 12, or permission of the department
   Designed for Community Health majors. This course includes the study of man's
   physical environment and health problems related to the environment, including
   water, air, vectors, sewage disposal, food, occupational health and safety,
   and other related areas.

141. Radiological Health for Community Health (2 cr)
   Prereq Chem 01 or 03 and Physics 01 or permission of the department
   Designed for Environmental Health majors. Study of basic principles involved
   in general ionizing radiation protection and the foundations for a radiological
   safety program including procedures, training, and regulations.

142. Studies in Environmental Health (2 cr)
   Prereq PubHlth 140 or permission of the department
   Designed for Environmental Health majors. The course includes studies of some
   of the major problem areas of community, rural, industrial, and academic
   environmental health. Emphasis will be given to study of these problems and
   field surveys of these particular areas. The role of the environmental health
   worker and the developing of remedial programs will be discussed.
143. Occupational Health and Safety (2 cr)
   Prereq PubHlth 01 or 112, or permission of the department
   Designed for majors in Environmental Health. This course includes the study of safety hazards in the home, industry, and general environment, and methods for preventing accidents and developing injury control programs.

144. Health of the School Child (3 cr)
   Provides basic information on growth and development; surveys the responsibilities of the school relating to appraisal, protection, and promotion of child health through health services, health instruction, and the school environment. The role of the classroom teacher is emphasized with secondary emphasis placed on role of the administrator, school physician, nurse, and other school health personnel. Health problems common to the school age population are considered along with the legal implications of various aspects of school health.

151. School Health Program (3 cr)
   Prereq PubHlth 150
   Designed for Community Health and School Health Education majors. This course is a sequence course to 150 where problems of school health are considered in depth. Visitations planned to schools for observation and evaluation. The role of official and voluntary health agencies in school health programs are considered. Particular attention is given to the interrelated role of teachers, parents, physicians, and nurses in the total health education of students.

160. Health in the Family (3 cr)
   The family as the basic unit in society with consideration of the health problems facing the family. Emphasis given to the health supervision and care of common ailments, the physiology of human reproduction, the principles of growth and development, and the community resources upon which the family may call for assistance in the prevention and care of illness.
INDEX

Administration, 5, 21
Admission to the College of Medicine
   Application for, 25
   By transfer, 27
   Specific recommendations for, 29
Calendar, 2
College of Medicine
   Clinical facilities, 44
   History, 25
   Laboratory facilities, 45
Class standing and promotion, 30
Comprehensive examinations, 31
Courses of instruction, 49
Curriculum, 46
Cytotechnology, 89
Degrees, 32

Department chairmen, 22
Examinations and grades, 31
Faculty, 6
Fees and expenses
   Cytotechnologists, 89
   Graduate students, 37
   Medical students, 33
   Medical technologists, 84
   Physical therapy, 90
   Radiologic technologists, 96
Financial aid, 38
Postdoctoral medical education, 48
Registration and admission to classes, 30
Veterans Administration Benefits, 30
1. North Laboratory
2. Basic Science Building
3. Library
4. South Laboratory
5. Conkling Hall
6. School of Nursing
7. University of Nebraska Hospital and Clinics
8. Eppley Cancer Institute
9. Eppley Hall of Science
10. Clarkson School of Nursing
11. Doctors Building
12. J. P. Lord School
13. Children's Rehabilitation Institute
14. Hattie B. Munroe Home
15. Bishop Clarkson Memorial Hospital
16. Children's Memorial Hospital
17. Nebraska Psychiatric Institute
18. Memorial Research Laboratories
19. Steam and Power Plant
20. Services Building
21. Child Saving Institute