1970

Bulletin of the University of Nebraska: Annual Catalog of the College of Medicine, 1970-1971

University of Nebraska College of Medicine

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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 con-
science 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 poli-
tics 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 CALENDAR
ACADEMIC YEAR 1970-1971

Quarters
June 8 through August 30, 1970...................... Summer
August 31 through November 22, 1970........ Fall
November 23, 1970, through
February 28, 1971............................... Winter
March 1 through May 28, 1971................ Spring

Recesses and Holidays
July 4, 1970 (Saturday).......................... Independence Day
September 7, 1970 (Monday)....................... Labor Day
November 26, 1970 (Thursday).................... Thanksgiving
Noon, December 19, 1970, through
January 3, 1971................................. Winter Recess
Noon, March 27, through April 4, 1971.......... Spring Recess
May 31, 1971 (Monday)........................... Memorial Day

Special Events
September 16, 1970 (Wednesday).............. Field Day (Juniors)
October 25, 1970 (Sunday)......................... Family Day
May 1, 1971 (Saturday).......................... Pre-Med Day
April 13 and 14, 1971............................. National Board Examination, Part II
June 15 and 16, 1971............................. National Board Examination, Part I
June 6, 1971 (Sunday)............................ Commencement
October 6 and 7, 1970, and
May 4 and 5, 1971.............................. State of Nebraska Basic Science Examination

Freshmen and Sophomores
August 27, 1970 (Thursday)...................... Freshman orientation, a.m.
August 27, 1970 (Thursday)...................... Freshman physical examination, p.m.
August 27, 1970 (Thursday)...................... Sophomore registration, p.m.
first half tuition due
August 28, 1970 (Friday).......................... Freshman registration, a.m.
first half tuition due
August 31, 1970 (Monday)......................... First day of classes
January 29, 1971 (Friday)........................ Balance of tuition due
Juniors and Seniors

June 8, 1970 (Monday).......................... First half tuition due
June 8 through July 5, 1970.................. Period IA
July 6 through August 2, 1970............. Period IB
August 3 through August 30, 1970.......... Period IIA
August 31 through September 27, 1970..... Period IIB
September 28 through October 25, 1970... Period IIIA
October 26 through November 22, 1970.... Period IIIB
November 23 through
   December 20, 1970.......................... Period IVA
January 4 through January 31, 1971........ Period IVB
February 1 through February 28, 1971..... Period VA
March 1 through March 28, 1971............ Period VB
April 5 through May 2, 1971............... Period VIA
May 3 through May 28, 1971................. Period VIB
Architect's drawing of the new addition to University Hospital. It adds 200 teaching beds to the college. Older sections of the hospital will be remodeled.

Basic Science Building and Library of Medicine
ADMINISTRATION

The Board of Regents

Term Expires

Richard E. Adkins, Osmond.....................................................January 1971
B. N. Greenberg, M.D., York....................................................January 1971
Richard L. Herman, Omaha......................................................January 1973
Edward Schwartzkopf, Lincoln.................................................January 1973
J. G. Elliott, Scottsbluff.........................................................January 1975
Robert L. Raun, Minden........................................................January 1975
G. Robert Ross, Lincoln, Corporation Secretary

University-Wide

D. B. Varner, M.S., Chancellor.
Merk Hobson, Ph.D., Executive Vice Chancellor.
G. Robert Ross, Ph.D., Vice Chancellor for Student Programs.
Harry S. Allen, M.S., Director of Institutional Research and Planning.
Gene A. Budig, Ed.D., Assistant Vice Chancellor and Assistant Corporation Secretary.
Norman H. Cromwell, Ph.D., Executive Dean for Graduate Studies and Research.
Carl Donaldson, M.S., Director of Business Services.
George S. Round, B.S., Director of Information and Special Assistant to the Chancellor.
Francis Lawrence Schmehl, S.D., Research Administrator.
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.
Lois Merrill, M.S., Associate Dean of the School of Nursing.
Mary Jo Henn, M.D., Assistant Dean of the College of Medicine.
Warren H. Pearse, M.D., Assistant Dean of the College of Medicine.
Paul E. Hodgson, M.D., Assistant Dean for Curriculum.
Robert H. Messer, M.D., Assistant Dean for Graduate Study.
Pete Boughn, B.A., Administrative Assistant to the President of the Medical Center.
Richard Schripsema, M.H.A., Medical Center Director of Business and Finance and University Hospital Administrator.
Terry Barton, B.A., Director of Medical Center Public Information.
Jesse C. Edwards, M.S., Administrative Associate to the Dean of the College of Medicine.

Emeriti Faculty

Clarence F. Bantin, B.S., M.D., Associate in Pediatrics, Emeritus.
James Winifred 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.
Herbert Heywood Davis, A.B., M.D., Professor of Surgery, Emeritus.
Herbert Leroy Davis, A.B., Ph.D., Associate Research Professor of Surgery and Biochemistry, Emeritus.
Frank Lowell Dunn, B.S., M.D., Professor of Internal Medicine, Emeritus.
H. Chandler Elliott, B.A., M.A., Ph.D., Professor of Anatomy, Emeritus.
Horace K. Giffen, B.A., M.D., Assistant Professor of Pathology, Emeritus.
Wallace Mark Gysin, M.D., Associate Professor of Neurology and Psychiatry, Emeritus.
Fred L. Humoller, B.S., Ph.D., Associate Research Professor of Pharmacology, Emeritus.
John Hewitt Judd, B.S., M.D., Professor of Ophthalmology, Emeritus.
Easley Joseph Kirk, A.B., M.D., Associate Professor of Internal Medicine, Emeritus.
John Stephen Latia, A.B., Ph.D., Professor of Anatomy, Emeritus.
Joseph Daniel McCarthy, M.D., Professor of Internal Medicine, Emeritus.
Sturgis Murgulis, A.B., M.A., Ph.D., Professor of Biochemistry, Emeritus.
Charles Austin Owens, B.S., M.D., Associate Professor of Urology, Emeritus.
John Phibrook Redgwick, B.S., M.D., Professor of Obstetrics and Gynecology, Emeritus.
Helen Wyandt Reihart, B.S., M.S., Research Associate in Psychiatry, Emeritus.
William Leete Shearer, A.B., D.D.S., M.D., Professor of Surgery, Emeritus.
Chester Hill Waters, Sr., B.S., M.D., Professor of Surgery, Emeritus.

Senior Consultants

Leiland C. Alberison, A.B., M.D., Instructor in Internal Medicine, Senior Consultant.
Allen Byford Anderson, M.D., Clinical Associate in General Practice, Senior Consultant.
Arthur Wesley Anderson, Sr., B.A., M.D., Clinical Associate in General Practice, Senior Consultant.
Harley Eric Anderson, B.S., M.D., Associate Professor of Obstetrics and Gynecology, Senior Consultant.
Walter Benthack, B.A., M.D., Clinical Associate in General Practice, Senior Consultant.
Gordon Newell Best, B.S., M.D., Assistant Professor of Internal Medicine, Senior Consultant.
James Dewey Bisgard, A.B., M.D., Professor of Surgery, Senior Consultant.
Waldron Alvin Cassidy, A.B., M.D., Professor of Otorhinolaryngology and Consultant in Bronchoscopy, Senior Consultant.
John 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 General Practice, Senior Consultant.
George Alfred Haslam, A.B., B.S., M.D., Clinical Associate in General Practice, Senior Consultant.
Harlan S. Heim, B.A., M.D., Clinical Associate in General Practice, Senior Consultant.
Dwight Otis Hughes, B.S., M.D., Clinical Associate in General Practice, Senior Consultant.
Wayne McKinley Hull, B.A., B.S., M.S., M.D., Assistant Professor of Internal Medicine, Senior Consultant.
J. Jay Keegan, A.B., A.M., M.D., Professor of Surgery, Senior Consultant.
Earl F. Leininger, B.S., M.D., Clinical Associate in General Practice, Senior Consultant.
Ralph Herbert Luikart, M.D., Professor of Obstetrics and Gynecology, Senior Consultant.
James Sylvester McAvin, Ph.G., M.D., Associate in Radiology, Senior Consultant.
Aaron M. McMillan, A.B., M.D., Clinical Associate in General Practice, Senior Consultant.
Morris Margolin, A.B., M.D., Assistant Professor of Internal Medicine, Senior Consultant.
Willson Bridges Moody, A.B., M.D., Professor of Internal Medicine, Senior Consultant.
Harold Smith Morgan, A.B., 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 Medicine, Senior Consultant.
Theodore Augustus Peterson, B.S., M.D., Clinical Associate in General 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., Professor of Dermatology and Syphilology, 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.
Dean Craig Affleck, B.S., M.A., Ph.D., Professor of Medical Psychology, Psychiatry.
John Andrew Aila, Ph.D., M.D., Professor of Neurology, Professor of Psychiatry, and Associate in Physical Medicine and Rehabilitation.
John R. Allely, A.B., M.D., Assistant Instructor in Internal Medicine.
Craig A. Albin, A.B., M.S., A.M., A.B., M.D., Associate Professor of Ophthalmology.
Rashid Abdulla Al-Rashid, B.S., M.D., Assistant Professor of Pediatrics.
Jurgen F. Althoff, M.D., Research Assistant, Pathology.
R. Stephen Amato, B.S., M.A., Ph.D., Assistant Professor of Human Genetics, Department of Pediatrics.
Chauncey Leroy Anderson, B.S., M.D., Clinical Associate in Family Practice.
Lawrence Lloyd Anderson, A.B., M.D., Associate in Surgery.
Robert C. Anderson, B.S., M.D., Clinical Associate in Family Practice.
Thorwald Robert Anderson, A.B., M.D., Clinical Assistant Professor of Pathology.
Carol Remmer Angle, A.B., M.D., Associate Professor of Pediatrics.
William Dodge Angle, B.S., M.D., Associate Professor of Internal Medicine and Physiology.
K. Don Arrasmith, A.B., M.D., Instructor in Family Practice.
Charles Ferg Ashby, B.A., B.S., M.D., Clinical Associate in Family Practice.
Stanley Monrad Bach, B.A., M.D., Associate Professor of Orthopedic Surgery and Anatomy and 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.
Paul Martin Bancroft, B.S., M.S., M.D., Clinical Associate Professor of Pediatrics.
*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. Barker, B.S., M.S., Ph.D., Research Assistant Professor of Obstetrics and Gynecology and Associate Professor of Biochemistry.
John Lucian Barmore, M.D., Associate Professor of Surgery.
John Hodgson Barthell, M.D., Clinical Instructor in Dermatology and Syphilology.
George William Bartholow, B.S., M.D., Associate Professor of Psychiatry.
Terence R. Barton, B.A., Director of Public Information, with rank of Assistant Instructor.
Francis F. Bartone, A.B., M.D., Associate Professor in Urology (Vice Chairman of Department).
David W. Bean, B.S., M.D., Assistant Professor of Psychiatry.
Dennis D. Beavers, M.D., Instructor in Obstetrics-Gynecology.
Meyer Beber, B.S., Ph.D., M.D., Professor of Internal Medicine and Associate Professor of Biochemistry.
Melvin Dean Bechtel, M.D., Instructor in Family Practice.
William L. Beck, M.D., Instructor in Otorhinolaryngology.
Gladys M. Beddoc, B.A., M.D., Assistant Instructor in Otorhinolaryngology.
Edward T. Beitenman, B.S., M.D., Assistant Professor of Psychiatry.
Charles Dudley Bell, M.A., M.D., Instructor in Dermatology and Syphilology.
Arthur Lawrence Bennett, A.B., Ph.D., M.D., Professor of Physiology (Chairman of Department).
Reba Ann Benschoter, B.A., M.S., Associate Professor of Medical Teaching Aids, Psychiatry.
Linda L. Berg, B.A., M.S.W., Assistant Instructor in Pediatrics.
Bradley M. Berman, B.A., M.D., Instructor in Neurosurgery.
Kenneth K. Berry, B.A., Ph.D., Assistant Professor of Psychiatry.
Wesley C. Berry, Jr., D.D.S., M.S., Assistant Professor of Periodontics.
William Morris Berton, M.D., Professor of Pathology.
Albert S. Black, B.S., M.D., Assistant Professor of Surgery.
Richard B. Bird, B.A., B.S., M.D., Professor of Physical Medicine and Rehabilitation (Chairman of Department).
Phyllis Ann Bleaze, B.S., Assistant Instructor in Pathology.
Irvin LeRoy Blos, B.S., M.S., M.D., Instructor in Psychiatry.
Alan Jay Biotisky, B.S., Instructor in Nuclear Physics, Department of Radiology.
Robert Ernest Bodner, B.A., M.D., Instructor in Radiology.
William Carl Boelter, B.A., M.D., Associate in Obstetrics and Gynecology.
Daniel G. Bohi, B.A., M.D., Assistant Professor of Obstetrics-Gynecology.
Donald Robert Bohnenkamp, Demonstrator in Physical Medicine and Rehabilitation.

* On leave of absence.
Richard A. Bolamperiti, M.D., Assistant Professor of Radiology.
Theodore T. Bolliger, A.B., M.D., Assistant Professor of Radiology.
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.
John David Boyett, B.S., M.D., Assistant Professor of Internal Medicine.
Rena E. Boyle, R.N., 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 Charles Brauer, A.B., M.D., Assistant Professor of Surgery.
John Grierson Brazer, A.B., M.D., Associate Professor of Internal Medicine.
William S. Car B., B.A., M.D., Assistant Professor of Physical Medicine and Rehabilitation.
Charles M. Bressman, A.B., M.D., Clinical Associate in Family Practice.
Dale E. Brett, B.A., M.D., Instructor in Surgery.
Herman Henry Brinkman, B.S., M.D., Clinical Assistant in Surgery.
John Andrew Brown, III, B.S., M.D., Instructor in Family Practice.
Kenneth W. Brown, B.A., M.D., Assistant Professor of Administrative Medicine.
Kenneth Munro Brown, A.B., M.S., M.D., Associate Professor of Surgery.
John Hurbert Brush, B.S., M.D., Associate Professor of Surgery.
Donald John Bucholz, Jr., A.B., M.S., M.D., Associate Professor of Internal Medicine.
James C. Buell, M.D., Assistant Instructor in Internal Medicine.
Paul Gordon Bunker, B.S., M.D., Senior Consultant in Otorhinolaryngology.
Richard Arndt Bunling, B.S., M.D., Assistant Professor of Radiology.
Charles Wilhelm Burkland, A.B., B.S., M.D., Associate Professor of Neurosurgery.
Dwight Willard Burney, Jr., B.A., M.D., Associate Professor of Orthopedic Surgery.
Arnold G. Burnham, B.S., M.D., Clinical Associate in Family Practice.
William G. Burrows, M.L.C.C., M.D., Professor of Psychiatry (Associate Director, Nebraska Psychiatric Institute).
David Samuel Burton, Demonstrator in Physical Medicine and Rehabilitation.
Olin James Cameron, M.S., M.D., Professor of Dermatology and Sphyiology.
Oscar Carp, B.S., M.D., Associate Professor of Otorhinolaryngology.
Dwight Willard Burney, Jr., B.A., M.D., Associate Professor of Otorhinolaryngology.
Michael J. Carver, B.S., M.S., Ph.D., Professor of Biochemistry and Research Professor of Psychiatry.
Ralph Lowell Cassel, A.B., M.D., Clinical Associate in Family Practice.
Ralph J. Cerny, A.B., M.H.A., Associate Hospital Administrator with rank of Assistant Professor.
Charles C. Chapple, M.D., Professor of Pediatrics.
George A. Charnock, M.H.C., Ph.D., Associate Professor in Biochemistry.
Henri E. Chehab, M.D., Assistant Professor of Obstetrics-Gynecology.
LeGrande 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, M.D., Assistant Instructor in Internal Medicine.
Robert Morris Cochran, B.S., M.D., Associate in Surgery and Associate in Anatomy.
Charles Maxwell Coe, B.S., M.D., Clinical Associate in Family Practice.
John Daniel Cope, 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 C. 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 Connors, B.S., Chief Pharmacist with rank of Assistant Instructor.
Eugene K. Conrad, B.S., Assistant Instructor in Biochemistry.
George D. Cooper, B.S., M.D., Clinical Associate in Family Practice.
John H. Copenhaver, B.S., M.D., Assistant Professor of Psychiatry and Biochemistry.
Marion deV. Cotten, B.S., M.S., Ph.D., Professor of Pharmacology (Chairman of Department).
Walter Thomas Cotton, B.S., M.D., Associate Professor of Obstetrics and Gynecology.
Michael Crofoot, A.B., M.D., Professor of Pediatrics.
Herbert R. Crowley, B.A., M.D., Assistant Professor of Otorhinolaryngology.
Dale Alan Cruise, B.S., M.D., Assistant Professor in Obstetrics and Gynecology.
Denis Joseph Cukla, B.S., M.D., Assistant Professor of Surgery.
Marion Rose Cunningham, B.S., Instructor in Psychiatry.
Louis T. Davies, A.B., B.S., M.A., M.D., Clinical Assistant Professor of Surgery.
J. Allan Davis, B.S., M.D., Associate in Otorhinolaryngology.
John Byron Davis, B.S., M.D., Associate Professor of Surgery.
John Calvin Davis, B.S., M.D., Associate Professor of Internal Medicine and Associate Professor and Acting Chairman Department of Preventive Medicine and Public Health.
Richard B. Davis, B.S., M.D., Ph.D., Associate Professor, Division of Hematology, Internal Medicine.
Stanley L. Davis, B.A., M.D., Assistant Professor of Internal Medicine.
William Clayton Davis, M.D., Professor of Surgery.
Peter R. DeMarco, M.D., Assistant Professor of Otorhinolaryngology.
William A. DeRoin, B.S., M.D., Instructor in Family Practice.
John Lage Dewey, A.B., M.D., Instructor in Internal Medicine.
William John Dickerson, A.B., M.D., Assistant Professor of Internal Medicine.
Marvin L. Dietrich, B.S., M.D., Assistant Instructor, Obstetrics and Gynecology.
Byron M. Dillow, B.S., M.D., Assistant Instructor in Surgery.
Giampiero di Mayorca, M.D., Professor of Microbiology.
Howard A. Dinsdale, A.B., M.D., Instructor in Ophthalmology.
James William Dinsmore, B.S., M.D., Assistant Professor of Orthopedic Surgery.
Charles A. Dobry, A.B., M.D., Assistant Professor of Radiology.
William Alton Doering, A.B., M.D., Clinical Associate in Family Practice.
John Y. Donaldson, A.B., M.D., Assistant Instructor in Psychiatry.
John D. Douthit, B.S., M.D., Associate Professor of Orthopaedic Surgery (Vice Chairman of Department).
Jack W. Dover, B.A., B.S., Assistant Instructor in Microbiology.
Gloria Dreessen, B.S., Assistant Instructor in Pathology.
George R. Dubes, B.S., Ph.D., Associate Professor of Microbiology.
Burton Jay Dunévitz, B.S., Lecturer in Physical Medicine and Rehabilitation.
Arthur Lovell Dunn, A.B., A.M., Ph.D., Assistant Professor of Biochemistry and Biophysics in Radiobiology.
Stephen John Dutch, Jr., A.B., M.D., Associate Professor of Neurology and Associate Professor of Pediatrics.
Carol Lou Dworak, B.S., Assistant Instructor in Radiology.
Frank Lewis Eagle, B.S., M.D., Associate Professor of Ophthalmology.
Alvin M. Earle, B.S., M.S., Ph.D., Assistant Professor of Anatomy.
Louise Foster Eaton, A.B., M.D., Assistant Professor of Psychiatry and 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 Pediatrics, Associate Professor of Pharmacology.
Dale Walter Ebers, B.S., M.D., Assistant Professor in Pediatrics.
Robert Earl Ecklund, B.S., M.D., Associate Professor of Internal Medicine.
Jesse C. Edwards, B.S., M.S., Instructor in Administrative Medicine, Dean's Office.
Robert D. Ehrlich, A.B., M.D., Clinical Instructor in Surgery.
James E. Elson, B.S., M.S., Ph.D., Associate Professor of Human Genetics, Psychiatry, and Associate Professor of Pediatrics.
Louise John Ekeler, M.D., Clinical Associate in Family Practice.
William Benton Elfelt, B.S., M.D., Clinical Associate in Family Practice.
Alfred George Ellick, A.B., J.D., Associate Professor of Medical Jurisprudence (Chairman of Department).
Robert James Ellingson, B.S., M.A., Ph.D., M.D., Professor of Medical Psychology, Psychiatry, and Professor of Physiology.
Kenneth Wilson Ellis, B.S., M.D., Instructor in Orthopaedic Surgery.
James Howard Elston, M.D., Assistant Professor of Obstetrics and Gynecology.
Charles G. Erickson, B.S., M.D., Assistant Professor of Pediatrics.
Jeanette Ettinger, B.A., M.D., Assistant Professor of Psychiatry.
Geraldine Eyberg, R.N., Assistant Instructor in Pediatrics.
Robert Gerald Faler, B.S., M.S., Ph.D., Assistant Professor of Internal Medicine.
*Robert D. Faulkner, B.S., M.S., Ph.D., Assistant Professor of Biochemistry.
Robert Feldman, B.S., Research Assistant in Pathology.
Randolph M. Ferlic, B.S., M.D., Associate Professor of Surgery.
Alessandro Ferrero, B.S., M.D., Research Associate in Pathology.
Nancy Mary Fieber, B.S., Assistant Instructor in Pediatrics.
Charles A. Field, B.A., M.S., M.D., Assistant Professor of Obstetrics and Gynecology.
*On leave of absence.
K. 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, Clinical Director of Children's Service.
John Charles Finegan, M.D., Clinical Associate in Family Practice.
Roger Lee Fink, B.S., M.D., Instructor in Pathology.
Aliister Ian Finlayson, M.A., M.D., Professor of Neurological Surgery.
Eugel M. Finch, B.S., M.D., Assistant 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, Department of Psychiatry.
Martin T. Fleming, B.A., M.S.S.W., Instructor in Pediatrics.
Peggy Jane Fletcher, B.A., Assistant Instructor in Pathology.
Diana C. Fochi, B.S., M.A., Assistant Instructor in Pediatrics.
John F. Foley, B.S., M.D., Ph.D., Professor of Internal Medicine and Chief Coordinator, Medical Cancer Therapy Program.
Donovan B. Foote, Jr., B.S., M.D., Instructor in Otorhinolaryngology.
John Jay Ford, III, B.A., M.D., Clinical Associate in Family Practice.
Richard O. Forsman, B.S., M.D., Assistant Instructor in Internal Medicine.
Muriel Naomi Frank, A.B., M.D., Assistant Professor of Anesthesiology, Surgery.
Maurice D. Frazer, B.S., M.D., Clinical Associate Professor of Radiology.
Gordon Eric Fredrickson, B.S., M.D., Instructor in Dermatology and Syphilology.
Ivan Merwyn French, A.B., M.D., Clinical Associate in Family Practice.
Paul B. Frazier, M.D., Associate in Physical Medicine and Rehabilitation.
Walter J. Friedlander, B.A., M.A., Professor of Neurology (Chairman of Department), Professor of Anatomy.
William L. Fritz, M.D., Assistant Instructor in Internal Medicine.
Dwight Maurice Frost, B.S., M.D., Assistant Professor of Physical Medicine and Rehabilitation.
Samuel Isaiah Fuenning, B.S., M.S., M.D., Associate Professor of Preventive Medicine and Public Health.
Humberto Garcia, M.D., Assistant Professor of Pathology.
Paul Jay Gardner, A.B., M.S., Ph.D., Assistant Professor of Anatomy.
Charles Garett, A.B., M.S.W., Assistant Professor of Psychiatric Social Work, Psychiatry.
Richard Earl Garlinghouse, A.B., M.D., Clinical Associate Professor of Obstetrics and Gynecology.
Robert W. Garlinghouse, A.B., M.D., Clinical Assistant Professor of Surgery.
Edward E. Gaetz, B.S., M.S., Ph.D., Assistant Professor of Pharmacology.
Thomas D. Gensler, M.D., Instructor in Family Practice.
Harold Ellis Gentry, B.S., M.D., Clinical Associate in Family Practice.
Richard David Gentry, A.B., M.S., M.D., Clinical Associate in Family Practice.
William J. Gentry, B.S., M.D., Clinical Associate in Family Practice.
John Harold George, M.D., Instructor in Obstetrics and Gynecology.
John D. German, B.A., M.D., Associate Professor of Surgery.
Carl Frederick Gessert, A.B., M.S., Ph.D., Associate Professor of Pharmacology.
Robert F. Gething, B.A., M.D., Clinical Associate in Family Practice.
Gordon Everell Gibbs, A.B., A.B., M.D., Professor of Pediatrics.
Harold Gifford, Jr., B.S., M.D., Professor of Ophthalmology (Chairman of Department).
Louis Gilbert, A.B., M.D., Clinical Instructor in Urology.
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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 will introduce both freshman and sophomore students to clinical applications of these fundamental subjects. 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, 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 not more than two students 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 will be effective beginning with applicants of 1970 for the class entering in 1971. Printed application forms will be available from the American Medical College Application Service, Association of American Medical Colleges, Division of Student Affairs, One Dupont Circle, N.W., Washington, D.C. 20036; from the Registrar's Office, College of Medicine, University of Nebraska, 42nd Street and Dewey Avenue, Omaha, Nebraska 68105; and from most premedical advisors after June 1, 1970.

Complete instructions for proceeding with the application will be received with the application packet received from the above sources. 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 about July 1, 1970. 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 accepted students. Interview sessions will be held at the campus of the University of Nebraska in Lincoln in November or December. Interviews will be given at the College of Medicine on stated dates. 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.

Advanced Standing.—Application for admission 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, 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 their 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>
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<tbody>
<tr>
<td>CHEMISTRY</td>
<td>14</td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>BIOLOGY</td>
<td>12</td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>PHYSICS</td>
<td>8</td>
</tr>
<tr>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>ENGLISH</td>
<td>12</td>
</tr>
<tr>
<td>This must include at least one year of composition.</td>
<td></td>
</tr>
<tr>
<td>MATHEMATICS</td>
<td>9</td>
</tr>
<tr>
<td>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 college recommendation may be modified.</td>
<td></td>
</tr>
<tr>
<td>FOREIGN LANGUAGE</td>
<td></td>
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<tr>
<td>Although no college foreign language is required, this is considered a valuable elective. Also, it should be understood that this is required by the College 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 considering graduate work.</td>
<td></td>
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<tr>
<td>ELECTIVES</td>
<td></td>
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<tr>
<td>The student is urged to select courses from the general field of the humanities and behavioral sciences and not to limit his training to the above scientific subjects.</td>
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</tbody>
</table>
Credits offered from professional schools which do not regularly receive arts college credit are not accepted for premedical college requirements.

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 requirements 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 entrance 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 calendar. 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 considered 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 examinations, by personal observation and by other methods of evaluation. The grading system at the University of Nebraska College of Medicine is as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Point Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
</tr>
<tr>
<td>F</td>
<td>0.0</td>
</tr>
</tbody>
</table>

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 Q.P.A. of 2.0 in any single year to be advanced to the next year. The only exception to this rule is the freshman student who has not failed any course but whose Q.P.A. is less than 2.0. In this
situation the Scholarship Evaluation Committee will determine whether the student may advance to the second year in a status of scholastic probation or recommend other suitable action. The student must then achieve a Q.P.A. sufficiently high so that his cumulative average at the end of the second year is 2.0. The student will then be removed from scholastic probation.

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 cumulative grade point average of 2.0 or higher 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 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 29.

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:

- Late registration: $5.00
- Transcript or certificate of graduation:
  - One copy of either furnished free: $0.00
  - For each additional copy of either: $1.00
- Degree in absentia: $10.00
- Special examination, each course: $5.00
- Photostatic copy of diploma, 2 copies: $1.00
- Cap and gown rental fee: amount fluctuates.

Expenses.— Board can be obtained in the vicinity of the College campus at a cost of approximately $20 to $25 a week and comfortable rooms for about $40 a month. Students rooming together can obtain comfortable rooming quarters at slightly less than this amount. One hundred twenty-five to one hundred seventy-five dollars a year should be allowed for

* 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.
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 between $2300 and $2700.

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 semester, 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.
SCHOOL OF NURSING

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 session. 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 and that program. 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.

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 degree 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). Non-resident 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.

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.

FELLOWSHIPS AND GRADUATE ASSISTANTSHIPS

Fellowships are available to students who qualify for graduate study and research in the medical sciences. There are also part-time medical student fellowships from several 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 experience. Application for full fellowships should be made to the chairman of the department in which the student wishes to work. Application for summer fellowships should be made to the Chairman of the Committee on Scholarships and Awards. Graduate assistantships are available to students of exceptional ability to give them opportunity to do research in the medical sciences and fulfill the requirements for a Master of Science or Doctor of Philosophy degree.

SCHOLARSHIPS

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.

The University of Nebraska Upperclass Regents Scholarships.—A limited number of scholarships are made available annually by the Board of Regents to be awarded to sophomore, junior, and senior medical students on the basis of high scholarship. Application should be directed to the Dean.

Donald Walters Miller Scholarship.—Upon recommendation of the Dean, a medical or graduate student may compete for one of three or four $1000 scholarships made available annually by Mrs. Donald Walters Miller of Lincoln. These are awarded to students throughout the University on the basis of scholastic ability, educational and professional objectives, character, temperament, and financial need. A special University committee makes the award each spring.
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.

The following scholarships and fellowships are awarded on the basis of recommendation to the Dean by the Medical College Committee on Scholarships and Awards:

Jetur Riggs Conkling and Jennie Hanscom Conkling Foundation.—The will of the late Clementine C. Conkling provides for the creation of a trust to be known as the “Jetur Riggs Conkling and Jennie Hanscom Conkling Foundation,” the income of which is used by the Regents of the University of Nebraska in providing scholarships for deserving medical students. Scholarships may be awarded only after the close of the students’ first year in the Medical College.

August Frederick Jonas Senior Memorial Fund.—This fund was established by Mrs. A. F. Jonas of Omaha to provide assistance for needy students who are judged worthy on the basis of scholastic attainment, character and promise.

Faculty Woman’s Club Scholarship.—An award of $150 is made annually to the most worthy woman medical student finishing the first year.

Pfizer Laboratories Medical Scholarship.—For several years a scholarship has been made available annually to a particularly deserving student.

Dr. Ernest Tibbetts Manning Memorial.—The award is to be given to an undergraduate who has declared the intention to specialize in the field of public health, pathology, or preventive medicine, who has completed the freshman and sophomore years with a proper degree of excellence, who shows promise of future success, and is in need of financial assistance.

University of Nebraska College of Medicine Alumni Association Scholarship.—The Alumni Association of the College of Medicine makes available three tuition scholarships to be awarded to outstanding members of each entering class.

Dr. H. Winnett Orr Memorial Fund.—The income accruing to this fund is used in support of scholarships designed to aid in the payment of tuition for a freshman medical student. The recipients of the scholarship must have completed their premedic courses at the University of Nebraska and shown outstanding scholastic ability. They must show promise of success in their chosen field and be in need of financial assistance.

Health Professions Scholarship Program.—The purpose of these scholarships is to enable talented students from low-income families to undertake the course of study required to become physicians, dentists, optometrists, pharmacists, or podiatrists. These scholarships are available only to students who, without this financial assistance, would not be able to pursue the required studies. Before making a scholarship award the school must assess the financial resources which are available to the students. The maximum amount of the grant may not exceed $2,500 for each academic year.

New York Life Scholarship.—The University of Nebraska College of Medicine is one of eleven four-year medical schools selected under a new 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
a medical school. Started in the fall of 1966, each of the participating medical schools selects a qualified candidate in the incoming first-year class as the New York Life Medical Scholar. For renewal, the scholar­ship student'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 of these items submitted by the Dean for approval before each academic year. Only citizens of the United States or Canada are eligible for the scholarship.

Selection is solely the responsibility of the medical schools. Inquiries should be addressed to the chairman of the Scholarship Committee who will present names of applicants to the Dean.

**National Medical—Sloan Foundation Scholarships.**—Ten four-year medical scholarships were established in 1965 by National Medical Fellow­ships, Inc. and the Alfred P. Sloan Foundation. To qualify, a student must have demonstrated outstanding achievement in college, been accepted for admission by a medical school, and be a United States citizen. The scholar­ships, which average $5,000 for the four-year period of study, are limited to male Negro students. Inquiries should be addressed to the National Medical Fellowships, Inc., 951 East Fifty-Eighth Street, Chicago, Illinois 60637.

**LOANS**

There are a number of funds available to the University of Nebraska College of Medicine from which money can be lent to deserving students who are in need of financial assistance. Generally they are reserved for students who have established themselves as able and worthy during the completion of at least the first year in medical school.

Applications for loans from any of these funds should be made to the Student Assistance Committee on forms which are available in the Registrar's Office.

Ordinarily the Student Assistance Committee will accept applications during a period ending about one month before the dates on which payment of tuition is required. The exact dates will be posted at the College well in advance. Students who foresee the need of financial assistance should have submitted applications by these dates. Except under extreme and unusual emergencies, applications which fail to meet the deadline will be held for review until the next posted date.

**Health Professions Student Loan Program.**—Funds are provided on a matching basis by the University of Nebraska and the federal government. The program allows a student to borrow a maximum of $2,500 per academic year. Awards are made on the basis of financial need. Students do not begin repayment of their loans until one year after they cease to be full-time students. Application should be made to the University of Nebraska Scholarships and Financial Aids Office, 113 Administration Building, Lincoln. The filing deadline is March 1 prior to the academic year in which the loan is desired.

**The College of Medicine Alumni Association Student Loan and Scholar­ship Fund.**—On July 15, 1958, a fund was established by the University of Nebraska College of Medicine Alumni Association and placed in the custody of the University of Nebraska Foundation to provide loans or scholarships to students registered or accepted for admission in the College of Medicine. Applications for loans on this fund are received by the Student Assistance Committee.
Students enrolled in the College of Medicine may also receive loans through the Nebraska Medical Foundation and the Nebraska Medical Education Fund, Inc. The Student Assistance Committee can supply information on either of these sources.

The Josephine Chamberlin Loan Fund.—On the retirement of Miss Josephine Chamberlin as Superintendent of the University of Nebraska Dispensary on June 11, 1946, a fund was established in her honor. Loans from this fund are available to students of the College of Medicine and the School of Nursing.

The Faculty Woman’s Club of the University of Nebraska College of Medicine Student Loan Fund.—This fund was established in 1956. Money is assigned to it from operation of the students exchange shop. The fund is administered by the University of Nebraska Foundation under conditions which apply to loans from other funds.

Kellogg Fund.—In April, 1942, the W. K. Kellogg Foundation of Battle Creek, Michigan, gave the College of Medicine $10,000 to be used as a student loan fund, particularly to meet the emergency created by the accelerated war schedule and the consequent loss of student earnings during the summer. An additional grant of $5,000 was made later in the year.

Omaha Medical College Foundation.—This foundation, created in April, 1921, was established largely through contributions received from former professors in the Omaha Medical College. The object of the foundation is to promote the study of medicine and to provide for medical research in the University of Nebraska College of Medicine and to assist worthy students with loans.

Lizzie Oltmans and Frederick Oltmans Student Loan Fund.—In March, 1950, the donors named above gave $1,000 to the University of Nebraska Foundation to be used as a loan fund for undergraduate and graduate students enrolled in the College of Medicine.

Robert H. Storz Student Loan Fund.—This fund was established by Storz Brewing Company in 1952 with a sum of $1,500 to be paid to the University of Nebraska annually. The fund was established to provide loans to students in the College of Medicine who are in need of assistance.

Dr. Carl P. Wagner Memorial Medical Student Loan Fund.—The sum of $500 was given to the University of Nebraska Foundation in 1952. This fund was established to provide loans to students in the College of Medicine adjudged to be worthy and in need of assistance.

Dr. and Mrs. J. D. Thomas Medical Student Loan Fund.—This fund is available for loans to students who are in good standing and who are native born Nebraskans. Application blanks are obtained from the Registrar and must be signed by the Dean of the College of Medicine, the Chancellor of the University and the President of the Nebraska State Medical Association.

Scottish Rite Loan Fund.—A fund has been established with the University of Nebraska Foundation from which needy medical students may borrow up to $600 per academic year. Application should be made through the Student Assistance Committee.

Nebraska Medical Education Fund, Inc.—A group of local physicians and alumni of the University of Nebraska College of Medicine has established a fund to assist medical students, nursing students, interns,
and residents. Students in need of assistance may borrow up to $1,500 per academic year from this fund. Application should be made to the Student Assistance Committee at the College of Medicine.

The American Medical Association Education and Research Foundation (AMA-ERF) program permits qualified students to borrow a maximum of $1500 per year at essentially prime interest. The Foundation acts as guarantor for borrowers from this source. Applications are available in the Registrar's Office.

The Nebraska State Medical Association has invested funds in a loan program. This program is known as the Nebraska Medical Foundation. This, like the above, is a loan guarantee program which makes loans which may total not more than $1,500 during a twelve month period. Applications are available in the Registrar's office. Completed forms must be approved by the Dean or his designee.

AWARD

University of Nebraska College of Medicine Alumni Association Award. —Two awards of $50 may be given each year to the senior students presenting the best theses as judged by the Thesis Committee.

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.

The alumni of the Medical College offer two prizes of $50 each for the senior theses of the year judged best by the Thesis Committee.

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 267 beds. The Medical Center contains 95 beds at the Nebraska Psychiatric Institute, with an additional 44 beds at the Hattie B. Munroe Pavilion. University Hospital features three intensive care units, premature baby nurseries, a burn unit, and other specialized patient care facilities, all of which utilize the most modern equipment.

The main Hospital entrance faces 44th Street. Hospital administrative offices are on level four on the 42nd Street side of the 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.

OUTPATIENT FACILITIES

Separate outpatient clinics are located primarily in the north wing of the University Hospital building for general medicine and its subspecialties, general surgery and its subspecialties, general pediatrics and its subspecialties, obstetrics and gynecology and its subspecialties, ophthalmology, otolaryngology, physical medicine and rehabilitation, nuclear medicine, and radiation therapy. Psychiatry clinics are conducted at the Nebraska Psychiatric Institute. The wide diversity of disease processes and preventive care provides many teaching opportunities for students under supervision of the clinical staff.

AFFILIATED HOSPITALS

Bishop Clarkson Memorial, Immanuel, Methodist, Douglas County, and Veterans Administration hospitals in Omaha, Nebraska, 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.

POSTGRADUATE PROGRAMS

Graduates of the College of Medicine are afforded a wide selection of internships in the University and affiliated hospitals, as well as in other states. Forty-one internships, rotation and straight, as well as 44 first-year residency positions (116 residencies in total), are available during the 1970-71 school year at University Hospital and at Nebraska Psychiatric Institute.

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 two and three 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 preparation rooms.

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 is 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. A second laboratory provides space for an equal number of students to work in pairs on small animals and on tissues and organs *in vitro* as well as to make measurements on human subjects. Until new construction is completed, these teaching facilities are shared with the Department of Pharmacology. A biophysics laboratory accommodates up to twenty-five students for procedures and demonstrations involving electronic, optical, and acoustic apparatus. 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, radio-isotope 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 collection of wax reproductions of various lesions. The museum is an important and necessary adjunct to the teaching of pathology and of clinical medicine.
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 comprehensive hematology loan set is issued to each pair of students for their study throughout the course. Adequate additional collections of materials including photomicrographs and other laboratory equipment are provided for the students, with the exception of microscopes. Demonstration materials are available in the student laboratory and in the University Hospital Laboratories. Teaching material is made available for the students from the University 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 information 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 Library service which means that this library is part of a national network to facilitate the transfer of biomedical information. Students of the College 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 network.

A competent staff of librarians is available for consultation and information 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 1970-1971

The curriculum of the University of Nebraska College of Medicine is undergoing adjustments in emphasis, focus, and distribution of time devoted to the areas involved in medical sciences. Some coordinated interdepartmental courses have been introduced and others are being developed for incorporation in 1970. 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 1970-1971 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—8 weeks

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—36 weeks

VACATION—8 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.
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, Elliott, Emeritus, Friedlander, Latta, Emeritus, Rigby, Skultety; Associate Professors Bach, Meader; Assistant Professors Earle, Gardner, Reynolds, Severn, Shervey; Associate Cochran; 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 (9.7 q hr I; 9 q hr graduate cr) Staff
The 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 (8.3 q hr I; 8 q hr 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 (5.3 q hr II; 6 q hr graduate cr) Staff
This course presents a study of the principal sensory and motor systems on a functional and clinical basis. The pathways within the central nervous system are traced through brain stem sections and brain dissections. Clinical cases are presented by members of the clinical staff to illustrate practical application of the subject material to clinical medicine.

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

ELECTIVES—

Note. Prerequisite for all elective courses is permission.

341. The Hypothalamus and Autonomic Nervous System (2 q hr cr III) Earle, Staff
An anatomical and physiological consideration of selected topics dealing with the role of the hypothalamus and autonomic nervous system in homeostasis. Offered during the first 8 weeks—spring quarter.

349. Research in Anatomy (5 q hr cr per period) Staff
An introduction to the organization and planning of a research project with the development of a program of investigation, the necessary techniques and literature review. The objective is to provide research experience for students not electing to enroll in the Graduate College.

350. Special Topics in Anatomy (1-3 q hr 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 Histology (4 q hr 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 hr 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 developmental 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, sectioning, 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 characteristics 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.

398. **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 registration will find these courses listed in the Graduate College Bulletin.
Biochemistry

Professors Ruegamer, Chairman, Carver, Harman, Jacobi, Lijinsky, Matschiner, Ryan; Associate Professors Barak, Beber, Charnock, Davis, Emeritus, Goldsmith, Mahowald, Mehman, Mirvish, Raha, Wilder; Assistant Professors Barker, Copenhagen, Hofert, Keefer, K. Lee, Wiltse; Instructors J. Lee, Moulton.

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 hr II)
This course includes all of the fundamental aspects of cellular biochemistry through basic intermediary metabolism. The major areas of carbohydrate, protein, lipid, amino acid and nucleic acid chemistry and metabolism are covered. In addition, protein synthesis and genetic control, radioisotope 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 hr III)
Prepar 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 (II)
Prepar Biochem 310. Offered concurrently with Biochem 311
The student may matriculate in only one subdivision per year, but may re-enroll in Subdivision A in subsequent years.

A. Colloquia (1 q hr)
Small groups of students meeting with faculty advisors to discuss a subject in depth. The student reads selected papers from the biochemical literature and discusses the experimental design, methods, data, and interpretation of the data with the group.

B. Laboratory Techniques (2 q hr per q)
The student spends a minimum of 6 hours each week in the research laboratories of faculty members, learning the principles and applications of selected techniques used to study problems in biochemistry.

C. Research Projects (3 q hr per q)
The student chooses from a variety of research projects directed by individual 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 hr per subdivision; see J below) Staff
Prepar Biochem 310
One subdivision of this course will be given each fall, winter and spring quarter except J 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. Intermediary Metabolism
C. Hormones
D. Lipids
E. Carbohydrates
F. Proteins
G. Nucleic Acids
H. Vitamins
I. Physical Biochemistry
J. Special Topics (1-5 q hr)

360. Advanced Techniques in Biochemistry (1-8 q hr per subdivision; max 18)
The subdivisions of this course are given periodically and permit the advanced study of techniques or research in biochemistry other than thesis research.

A. Instrumental and Physical Procedures
B. Micro-biological and Animal Procedures
D. Radioisotope Procedures

370. Seminar in Biochemistry (1 q hr per q)
398. Master's Thesis (max 9-15 q hr cr)
399. Doctoral Thesis (cr arr)
Correlation Courses

340. Genetics (0.8 q h cr, total 12 hrs) Eisen, Staff
Current principles and concepts of medical genetics are discussed on the subcellular to the organismal level. Examples of gene and chromosome disorders are presented from both clinical and basic science points of view. Procedures of genic counseling are emphasized.

Dermatology and Syphilology

Associate Professors Wilhelmj, Chairman; Instructors Bell, Fredrickson; Clinical Instructor Barthell; Senior Consultant Wilson.
A foundation in dermatology and syphilology is laid by lectures, clinics and demonstrations. At the University Dispensary 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
Quarter Hours: 5
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 out-patient 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.

Division of Family Practice


The objective of this Division 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 medical education in maintaining professional excellence.

Curriculum for the freshman and sophomore years is in the process of development.

FAMILY PRACTICE.—86

342. Outpatient Clerkships
   A. Family Practice Clerkship (5 q h cr; 4 weeks)
      A clinical experience in providing comprehensive health care and participating in seminars in the behavioral sciences and community medicine in order to further develop an understanding of human ecology, including the behavioral, environmental, and developmental. Limit 2.
   B. W Street Family Practice Clinic Clerkship (5 q h cr; 4 weeks)
      A clinical experience in comprehensive health care including community psychiatry, family planning, and school health. Limit 2.

346. Combination of Family Practice Clinic Clerkship or W Street Clerkship and Community Medicine Clerkship (10 q h cr; 8 weeks). Limit 2.
   A. Office Clerkship (5 q h cr; 4 weeks)
      This clerkship offers a chance to participate in and observe private practice in family physicians' offices in Omaha and Lincoln.
   B. Community Emergency Room (5 q h cr; 4 weeks)
      This is an experience at the Methodist Hospital under the direction of Dr. Harris Graves and Dr. Robert Stryker 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 Medicine Clerkship (5 q h cr; 4 weeks)
      This experience outside the Medical Center will include observation and experience in environmental health, including air and water pollution, school health, public health clinics, voluntary health agencies, welfare department medical activities, and industrial medicine. Limit 4.
   D. Migratory Health (5 q h cr; 4 weeks, June and July only)
      The student will participate in the Nebraska Migrant Health Project as members of the health team in the Family Health Clinics and other activities under the supervision of Dr. Walter Harvey, Jr., of Gering, Nebraska.

348. Community Preceptorship (5 q h cr; 4, 8 or 12 weeks)
   Each senior student is required to spend four weeks with a solo, dual, or group practice in which the student is given the opportunity to observe a local community and its interrelationships with the practice of medicine. The student may elect an additional four or eight weeks and so complete a total of three months in an outstate preceptorship if so desired.

349. Research (5 q h cr; 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 (2 q h II, III)
   Coordinated course considering population dynamics, reproduction, intrauterine and neonatal development. Obstetric features of pregnancy and delivery are included.
311. Human Genetics (2 q h II, III)
Current principles and concepts of medical genetics are discussed on the subcellular to the organismal level. Examples of gene and chromosome disorders are presented from both clinical and basic science points of view. Procedures of genetic counseling are emphasized.

312. Values in Medicine (1 q h 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.

330. Clinical Science Series (12 q h cr 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 and Rehabilitation, and Radiology participate in this series.

Internal Medicine

Professors Grissom, Chairman (until July 1, 1970), Shipp, Chairman (after July 1, 1970), Beber, Foley, Harman, Lehnhoff, Lemon, Paustian, Rigby, Tobin; Associate Professors W. Angle, Brazer, J. C. Davis, R. B. Davis, Ecklund, Greene, C. Hamilton, Henn, T. Hubbard, Kass, Lim, Long, Loomis, Matoloe, Morris, Muffy, Pepper, Pratt, Reiff, V. Ward, Ware, Wurl; Assistant Professors Boyett, Bucholz, Stanley Davis, Dickerson, J. R. Gordon, Graham, Hankins, Jackson, Jaros, Johnson, Knott, Langdon, L. R. Lee, R. Lewis, Meyer, Monto, Nutzman, Nye, O'Brien, Parrillo, Quaffe, Root, Rosenlof, Sage, M. Scott, Starke, Stitcher, Stratbucker, Taylor, E. F. Thompson, Weidler, Wolf, Wright, Wyrens; Research Assistant Professor W. Thomas; Instructors Bacon, Bressman, Dewey, Graves, Hames, Harvey, Holcombe, Hopkins, Jensen, J. Lewis, Matthews, Nolans, Novak, Schellak, Schid, Simmons, Slabaugh, Stumper, Stryker, Tomhave, Waller, A. Weaver, W. Weaver, Weeks, Westmore, Zacharias; Assistant Instructors Allely, Bancroft, Buell, Chilcoat, Choa, Fatte, Forsman, Fritz, Huang, H. Johnson, Kessinger, Olson, Rubin, Saulsbury, Thomas, Watson; Research Instructor Haack; Research Assistant Loch; Senior Consultants Albertson, Best, Fleishman, Hul, Margolin, Moody, Musklin, Reed; Emeriti Bresnahan, Dunn, Kirk, McCarthy.

Organization: Chairman—Joseph C. Shipp; Director of House Staff Program—Frederick Paustian.

Medical Services:
Hospital, University of Nebraska—Chief, Joseph C. Shipp
Hospital, Veterans Administration—Chief, Richard Tobin
Hospital, Douglas County—Chief, Joseph C. Shipp
Hospital, Bishop Clarkson Memorial—Chief, George W. Loomis
Hospital, University Medicine Clinics—Chief, Joseph C. Shipp
Section of Cardiology—Head, Robert L. Grissom
Cardiovascular Catherization Laboratory—Head, Robert L. Grissom
Section of Endocrinology—Head, Robert Ecklund
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 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. 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 which will persist for life.
INTERNAL MEDICINE.—20

310. Clinical Science Technic (2.7 q h cr 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 (1 q h cr III)
Application of scientific knowledge to the patient and his puzzling problems. Interdepartmental with surgery. (Formerly called Introduction to Medicine.)

322. Clinical Science Technic (5.1 q h cr)
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 q h cr; 8 weeks I, II, III, SS)
The student is a part of the team caring for the patients.

342. Ambulatory Medicine (10 q h cr; 8 weeks)
Experience with the ambulatory patient in medicine, surgery and subspecialty clinic areas, in the emergency room, and in other outpatient areas. The departments of Dermatology, Surgery, Otorhinolaryngology, and others cooperate in this effort.

INTERNAL MEDICINE ELECTIVES.—

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

344. Inpatient Clerkship (5-10 q h cr; 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 #330 and gives the student greater responsibility. Specific hospitals may be chosen by the student in Omaha or other medical centers 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 (5 q h cr) Mattole, Novak, Quaife
C. Cardiology (5 q h cr; 4 weeks; max 4 students) Grissom, Staff
A combined offering of medicine, surgery, and pediatrics. Hemodynamics, electrocardiography, phonocardiography, inpatient and outpatient experience.
D. Diabetes and General Medicine (5 q h cr; 4 weeks; max 2 students) Meyer
E. Endocrinology (10 q h cr—8 weeks; 5 q h cr—4 weeks; max 3 students) Ecklund, Staff
F. Gastroenterology (10 q h cr—8 weeks; 5 q h cr—4 weeks; max 4 students) Paustian, Staff
A combined offering of medicine, surgery, pediatrics, and radiology. Inpatient and outpatient experience.
H. Hematology (10 q h cr—8 weeks; 5 q h cr—4 weeks; max 10 students) Rigby, Staff
A combined offering of medicine, pediatrics, and pathology. Inpatient and outpatient experience.
I. Infectious Disease (cr arr) Davis, Staff
J. Renal (5 q h cr; 4 weeks; max 2 students) Loomis, Staff
K. Metabolism (cr arr) Tobin, Associates
L. Medical Electronics (5 q h cr I, III; 8 weeks, ½ time; min 3 students, max 6) Haack, Staff. Prereq Physiol 370
P. Oncology (10 q h cr—8 weeks; 5 q h cr—4 weeks; max 4 students) Lemon, Staff
Medicine, radiotherapy, and surgery inpatient and outpatient experience.
S. Psychosomatic Medicine (5 q h cr; 4 weeks; max 3 students) Ward
T. Pulmonary (10 q h cr—8 weeks; 5 q h cr—4 weeks; max 4 students) Kass, Staff

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 13) 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)
Prereq IM 330

358. Medical Seminar (1 q h cr per q)
Prereq IM 330

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

399. Doctoral Thesis (cr arr)

Medical Bibliography

Librarian Hetzner; Assistant Librarians Davidoff, Koenig, Fahey, 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) (0.8 q h cr)
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 Mayoecs, N. Miller, von Riesen; Associate Professors Dubes, McCarthy, Tremaine, White; Assistant Professors D. Harvey, J. Jones; 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

320. Medical Microbiology (14 q h cr 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 350 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 350
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

Neurology

Professors Friedlander, Chairman, Wigton; Associate Professors Aita, Dutch; Assistant Professor Lorenzo, Pellegrino; Instructor Cohen.

NEUROLOGY—36

321. Structure and Function of the Nervous System and Their Relation to Neurological Disease (1 q h cr III, 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
   Quarter Hours: 4
   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.
346. Clinical Neuroscience Clerkship

Periods Offered: Each 4 weeks
Student Limit: By arrangement
Quarter Hours: 5
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, McGoogan, Redgwick, Emeritus; Research Professor W. Ryan; Associate Professors Cotton, Messer, Olson, Rumbolz, J. Scott; Clinical Associate Professor Richard Garlinghouse; Assistant Professors Bohi, Chehab, Collins, Cruise, Elston, Field, Gorthy, H. Harvey, Jernstrom, P. Johnson, Magid, McGinnis, Orr, Roffman, Schack, Sundell, W. Taylor; Research Assistant Professor Barker; Associate Boelter; Instructors Alperin, Beavers, Bozena, George, H. Hansen, Heidrick, Hirst, K. Lewis, Moulton, Nelson, Nickel, Slatin, B. Taylor, Yost; Research Instructor J. Lee; Assistant Instructors Dietrich, L. Jones, Mulcahy; Senior Consultants H. Anderson, Luikart, 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 last 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

310. Maternal Health Care (1 q hr — Individual assignment)
   Each student is assigned to a pregnant patient whom he follows through prenatal care, delivery, postpartum, and newborn care.

320. Introduction to Obstetrics and Gynecology (2 q hr II)
   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 q hr; 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 (0.8 q hr II)
   Sex counseling, family planning, and the relation of complicated obstetrics-gynecology to other medical disciplines.

342. Outpatient (4 or 8 weeks; 5 q hr per 4 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 (5 q h cr per 4 weeks; limit 3) Pearse, Staff

344-B. Advanced Gynecology (5 q h cr per 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.

345. Obstetrics and Gynecology Tutorial (5 q h cr per 4 weeks; 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 (5 q h cr per 4 weeks) Pearse

Clerkships in University or teaching hospitals elsewhere. By individual approval only.

349-F. Research, Family Planning (5 q h cr per 4 weeks; limit 1) Orr

Problems of family planning, including clinical experience in a variety of settings.

349-M. Research, Maternal and Infant Care (5 q h cr per 4 weeks; 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 (5 q h cr per 4 weeks; 4 or 8 weeks; limit 1) Scott

Problems of diagnosis and treatment of malignant disease of the female reproductive system.

350. Advanced Obstetrics and Gynecology (6 q h 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 obstetric and gynecologic conditions will be emphasized.

351. Gynecological Pathology (3 q h 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 in preparation, review, and description of all specimens submitted in this area.

352. Pelvic Anatomy (4 q h 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.

353. Gynecological Radiology (1-5 q h cr) Hunt, 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 technics, the interpretation of films and the use of X-ray and radium. Independent reports will be required.

356. Gynecologic Endocrinology (3-5 q h cr per 4 weeks; 4 weeks)

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.

357. Obstetrical Hematology (3 q h 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.

358. 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.

359. Seminar (Weekly Friday seminar, 12:15 p.m., 1 q h cr per q for Graduate College enrollees, I, II, III—max 8) Pearse, Staff

398. Master's Thesis (9-15 q h cr)
The following courses are available to Graduate College students only:

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 Gifford, Chairman, Judd, Emeritus, Morrison; Associate Professors Alliband, Eagle, Filkins, Truelsen; Clinical Associate Professor Wood; Assistant Professors Latta, Meissner, Vickery; Instructors Dinsdale, Faier, Griffiths, Kurland, Nye, Pemberton, Woodford.

OPHTHALMOLOGY.—44

320. Medical Ophthalmology (2 q h cr 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
Quarter Hours: 5
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 Professors L. Thomas Hood, Chairman, John D. Douthit, Vice Chairman; Professors Hamsa, Sr., Teal; Associate Professors Bach, Burney, Smith; Assistant Professors Dinsmore, Hamsa, Jr., Minard, Pitner, Scott-Miller; Clinical Assistant Professors Mitchell, Stone; Clinical Instructors Horn, Webster; Instructor Kettleson.
Orthopedic surgery deals with the diseases, deformities, and injuries of the structures composing the musculo-skeletal system.

ORTHOPEDIC SURGERY.—48

344. Orthopedic Wards and Clinic Elective (5 q h cr; 4 weeks)
Clinical experience with members of the Orthopedic Staff at the University Hospital.

348. Orthopedic Clinical Clerkship (5 q h cr; elective 4 weeks)
Clinical experience with members of the Orthopedic Staff at the University Hospital and affiliated hospitals, as well as outpatient, office and emergency responsibilities.

Otorhinolaryngology

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

OTORHINOLARYNGOLOGY.—52
Two lectures are given on the anatomy of the ear and temporal bone and demonstration 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 examinations are given in conjunction with the sophomore course in Physical Diagnosis. Clinical science area lectures in the junior year, approximately 10 lectures.
PATHOLOGY

344. Otorhinolaryngology Clerkship
   Periods Offered: Each 4 weeks
   Student Limit: 3
   Quarter Hours: 5
   The student is involved closely with all facets of otorhinolaryngology, gaining
   a view of the scope of this field. Evaluation of patients, diagnostic considera-
   tions, 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
   Quarter Hours: 10
   Designed to support the research interests of a student in any area related to
   otorhinolaryngology. Eligibility for, and acceptance to, this program, by arrange-
   ment with the Chairman of the Department.

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

398. Master’s Thesis (9-15 q h cr)

399. Doctoral Thesis (cr arr)

Pathology

Professors McWhorter, Chairman, Berton, John Schenken, Tollman; Associate
Professors Simons, Assistant Chairman, Kulesh, Larsen, Wilson; Clinical Associate
Professor Tanner; Assistant Professors Fitch, Greene, Jones, Long, Papenfuss,
Roffman, Gerald Schenken, Scott, F. Smith, Tamisiea; Instructors Grier, M. Haven,
Hicks, Larsen, Padgett, Skoog, E. Smith, Stastney; Assistant Instructors Blease,
Dreessen, Haberman, Kruger, McIntyre, Pohle.

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.--55

311. Cell pathology (3 q h cr 1)
   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. **General Pathology** (14 q h cr, 3 q h graduate cr per q, max 9) McWhorter, Staff  
*Prereq: Permission*  
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.

322. **Clinical Pathology** (4 q h cr, 3 q h graduate cr) Larsen and Staff  
*Prereq: Permission*  
The lecture and laboratory course emphasizes selection and performance of laboratory tests used by the physician. The student becomes proficient with many such tests and acquires a working knowledge of the remainder. Special emphasis is placed on the selection of tests and the interpretation of such tests, correlating these results with clinical findings.

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** (0.8 q h cr II)  
A discussion of the aspects of forensic medicine.

341. **Multidiscipline Conference**  
Continuation of 330.

346. **Correlative Pathology** (5 q h cr each 4 weeks)  
*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** (5 q h cr each 4 weeks)  
B. **Clinical Pathology** (5 q h cr each 4 weeks)  
Biochemistry, blood banking, hematology, microbiology, special biochemistry.

349. **Special Problems and Research** (5 q h cr per 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
D. 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
Prereq Path 356
This will be a general study of the subject of tumor etiology with special emphasis on the phases represented by the investigative work carried on by the student. 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 qtrs
Instruction in the techniques for the preparation of human biopsy specimens, experimental animal tissues, bacteria and viruses for electron microscopic examination. 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, Chapple, Crofoot, Gibbs, Jenkins, Klok, Kugel, LaCrosse, Pearson, Robertson, Thomas; Clinical Professor Stafford; Associate Professors C. Angle, Ebadi, Ebers, Eisen, Hadley, Kepler, Menolascino, Mooring, Morris, Oberst, Rath, Saslow, Schlesser, Schreiner, Sullivan, Tussing, Wolfensberger, Wood, Zahller; Clinical Associate Professors Bancroft, Stewart; Assistant Professors Al-Rashid, Amato, L. Eaton, Erickson, Green, Hammer, Harris, Kincaid, Kuehn, Mason, McIntire, Miyazaki, Nilsson, Pellegrino, Perry, Schulz, Simon, Wilte; Clinical Assistant Professor Bosley; Research Assistant Professor Trembath; Instructors Anderson, Brockman, Fleming, Heaston, Hubbard, Struempler, Turner; Clinical Instructors Fijan, Grant; Assistant Instructors Berg, Eyberg, Fieber, Focht, Kimmel, Kliewer, McCoy.

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 Hospital. 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 (1.3 q h cr 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.
Clinical Clerkship (8 q h cr, I, II, III, IV; each 8 weeks)

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:

341. Pediatric Pharmacology, Clinical (1 q h cr) Ebadi
   Periods Offered: Each 4 weeks
   Student Limit: 2
   Prereq: Completion of sophomore pharmacology course
   The course consists of prenatal, perinatal, and neonatal pharmacology. The physiological and biochemical changes which influence drug metabolism during these periods will be discussed.

342. General Pediatric Outpatient (5 q h cr, student limit 4)
   Identical with 344, except in clinic.

344. General Pediatric Inpatient (5 q h cr)
   Periods Offered: Each 4 weeks
   Student 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 (5 q h cr)
   Periods Offered: Each 4 weeks
   Student Limit: 2
   B. Pediatric Neurology Pellegrino
   Senior students may elect a period of at least 4 weeks during which additional experience in pediatric neurology may be obtained. Clinical experience with both inpatients and outpatients is emphasized, but additional exposure to neurosurgery, electroencephalography, neuropathology, neuropsychology and/or research may be obtained to fit the individual needs and desires of the clerk.

C. Pediatric Cardiology Kuehn, Mooring
   The student attends two pediatric heart clinics and two adult heart clinics per week. He is responsible for the inpatients on Cardiology on both the Pediatrics and Adult Service. This has generally averaged a total of three to seven patients per week. He attends a specified number of catheterizations and is required to attend the two Cardiovascular Conferences per week. This combined program should provide him with ample clinical experience in cardiology. The students are also encouraged to follow on-going research programs.

E. 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 hematologic 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.

R. Pediatric Cardiology Kuehn, Mooring
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.

T. Pediatric Pulmonary Disease Gibbs, Hadley
Includes allergy and cystic fibrosis. Primary respiratory disease plays a major role in the practice of day by day acute illness as well as 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 Inpatient 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.

Y. Pediatric Intensive Care Elective Angle
With the participation of ICU Nursing, Pediatric Cardiology, and the Department of Anesthesiology, the student will receive instruction in the use of equipment and the techniques and methodology of cardio-pulmonary resuscitation and management of other pediatric emergencies. The student will function as Junior House Officer in the Pediatric ICU.

Z. Cardiovascular Disease Kuehn, Mooring
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, examination skills, especially in auscultation. Introduction to ongoing research projects. If interested, work on a senior thesis. Study patients through: (a) four pediatric and two adult cardiology clinics, (b) medicine and pediatric cardiology inpatient services, if desired by students, to Beatrice State Home for study of congenital disease, (c) cardiovascular conferences, two per week. Learn systematic approach to radiologic diagnosis of heart and vascular disease in plain films, fluoroscopy, and angiographic studies. Gain an understanding of operations for cardiovascular disease, including open heart surgery and post-operative management.

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

A. General Pediatric Preceptorship Ellison, Fijan, Look, Oberst, Schreiner, J. E. Thomas
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. Research and Special Problems
Periods Offered: Each 4 weeks
Student Limit: 2
Prereq: By arrangement
A. Family Management Research Wolfensberger
The student would be exposed to ongoing research activities in the area of management of the mentally retarded. Management in this context is defined as entry of individuals and/or agencies acting in societally sanctioned capacities into the functioning spheres of individuals, families, or larger social systems in order to bring about changes which are intended to benefit such individuals, their family social systems, or society in general. However, the research is of such a nature as to have relevance beyond retardation, and many of the techniques used are those of socio-behavioral research generally.

B. Fellowship in Cardiovascular Research
This elective is intended to provide assistance and supervision to a student interested in research in cardiology. Funds may be available for support.

350. Pediatric Gastroenterology (3 q h cr per q, total 9) Gibbs
Prereq: Medical school courses as follows: biochemistry, physiology, and histology or their equivalents
The special characteristics of the gastrointestinal physiology of the normal infant and the pathological physiology, clinical manifestations, and treatment of gastrointestinal diseases of special importance in early life will be surveyed. Particular attention will be given to the chronic metabolic diarrheas.

351. Endocrine and Metabolic Diseases in Early Life (3 q h cr per q, total 9) Gibbs, Jenkins, Wiltse
Prereq: same as in Ped 350
The normal endocrine physiology is reviewed as it pertains to the infant, child, and adolescent. Abnormalities of endocrine and metabolic nature in early life are considered.

353. Developmental Behavior Pattern of the Newborn (3 q h cr per q, total 6) Kugel
Prereq: M.D. degree or B.S. in Nursing or undergraduate major in psychology
A study of activities of the normal infant as related to environmental factors.

354. Pediatric Cardiology (3 q h cr per q, total 9) Mooring
Prereq: Ped 341 and 342
Acquisition of experience in examination of the heart of the infant and child, including physical examination and study of fluoroscopy, electrocardiography, angiography and cardiac catheterization. Experience in the diagnosis and treatment of cardiac diseases in pediatrics. Management of problems of cardiovascular physiology during and following open heart surgery.

355. Advanced General Pediatrics (SS, I, II, III, 6-12 q h cr) Van Leeuwen
Prereq: Ped 341 and 342
Students study special patients presenting diagnostic and therapeutic problems of unusual interest. These studies summarize all pertinent literature and include laboratory procedures not routinely available.

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, Kincaid, Kugel, McGee, Menolascino, Pearson, Saslow, Van Leeuwen, Wolfensberger
Selected topics of current research or contemplated research with presentation of appropriate patients.
PHARMACOLOGY

359. Research in Pediatrics (cr arr) Staff
   Prereq or parallel Ped 358

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

359. Doctoral Thesis (cr arr)

Pharmacology

Professors Cotten, Chairman, McIntyre; Associate Professors Ebadi, Gessert; Assistant Professors Gatz, Hendrickson; Instructor Sievers; Assistant Instructor Logan.

PHARMACOLOGY.—66

321. Medical Pharmacology (10 q h cr 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 (341A, 341B, 341C, 341D) are lecture and/or seminar courses which will meet three times per week for 4 weeks. The prerequisite for each is Pharmacology 321 or equivalent. Limited to a minimum of 6 students with no maximum limit.

341-A. Principles of Drug Action (1 q h cr I; 1st 4 weeks) Gessert, Hendrickson
   Consideration of absorption, distribution, metabolism, and elimination of drugs; structure-activity relationships; drug allergy; resistance, tolerance, idiosyncrasy, teratogenesis.

341-B. Effects of Drugs on Bioenergetics (1 q h cr II; 2nd 4 weeks) Gatz
   Biochemical considerations of the effects of selected drugs upon cellular respiration and glycolysis.

341-C. Developmental Pharmacology (1 q h cr I; last 4 weeks) Ebadi
   Physiological and biochemical changes that influence drug metabolism during the developmental period (prenatal to adult). Some of the content of this course is similar to that of Pediatrics 341, except that here basic mechanisms are emphasized rather than clinical applications.

341-D. Toxicology (1 q h cr I; 1st 4 weeks) Hendrickson, McIntyre
   Poisons, acute and chronic; methods of detection and measurement; antidotes and principles of treatment.

350. Technic in Experimental Pharmacology (1-9 q h cr) Staff
     Prereq Pharmacol 321 or equivalent
     This course consists of instruction in the preparation of organs and tissues in situ and ex situ for experimental study; instruction in the construction, manipulation, and operation of apparatus.

351-A. Advanced Pharmacology (1-9 q h cr) Staff
     Prereq Pharmacol 350 or equivalent
     In vivo aseptic preparations; instruction in the fundamental technics of aseptic surgery in the preparation of animals for study.

351-B. Advanced Pharmacology (1-9 q h cr) Staff
     Prereq Pharmacol 350 or equivalent
     In vivo preparations of tissues for metabolism studies, perfusion of organs, isolated heart preparations, isolated smooth and striated muscle, etc.

352-A. Advanced Pharmacology—Toxicology (1-9 q h cr) Cotten, Hendrickson, McIntyre and Staff
     Prereq Pharmacol 350 or equivalent
     The recognition of poisons in the body; quantitative determinations of toxic substances in necropsy materials and excreta; Spectrophotometric determinations of metallic ions; qualitative and quantitative tests for drugs by chromatographic and other methods.

352-B. Advanced Pharmacology—Bioassay (1-9 q h cr) Humoller, Gessert, McIntyre
     Prereq Pharmacol 350 or equivalent
     The assay of drugs, hormones, and vitamins by biometric methods.

353-A. Vitamin and Endocrine Studies—The Deficiency State (1-9 q h cr) Staff
     Prereq Pharmacol 350 or equivalent
     Animal experiments on deficient diets; avitaminosis; etc.

353-B. Vitamin and Endocrine Studies—The Endocrine System (1-9 q h cr) Staff
     Prereq Pharmacol 350 or equivalent
     Studies in hypo- and hyper-hormonal activity; technics for extirpation of glands of internal secretion.
354. Application of Pharmacology to Clinical Problems (1-9 q h cr) Cotton, Jones, Sievers
   Prereq Pharmacol 350 or equivalent
   Special use of drugs and their diagnostic and therapeutic use in clinical problems.

355. Special Applications of Pharmacology to Industrial Medicine and Surgery (1-9 q h cr) Jones, McIntyre, Sievers
   Prereq Pharmacol 350 or equivalent
   Special use of drugs and their diagnostic and therapeutic use in clinical problems.

356. Biochemistry of the Cell (4-15 q h cr) Staff
   Prereq Pharmacol 350 or equivalent
   Emphasis on the physiology, biochemistry and pharmacology of anatomical units of the neuro-muscular system, and the effects of drugs and poisons on their functions and enzyme systems.

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

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

399. Doctoral Thesis (cr arr)

**Physical Medicine and Rehabilitation**

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

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.**

**Physiology**

Professors Bennett, Chairman (until July 1, 1970), Gilmore, Chairman (after July 1, 1970), Ellingson, Lowenberg, Paustian, Tobin; Associate Professors W. D. Angle, Lim, Myers, Rose, Stratbucker, Ware; Assistant Professors Miles, Weidler, Wolf; Instructors Graham, Haack, Varner, Wigton.

Course 310 in Medical Physiology and Biophysics is required for the degree of Doctor of Medicine. It provides a widely inclusive study of functional mechanisms within the human body. Function is studied from the standpoint of the total man, as he reacts to his external and internal environments and also in relation to his several functional systems, specialized tissues, cells and cellular components.

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. Course 310 may carry graduate credit toward a minor for a graduate student majoring in another department.
Graduate studies leading to the M.S. and Ph.D. in Physiology are designed primarily to prepare the student for an academic career in a medical setting. Courses numbering 350-379 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.—68

310. Medical Physiology (13 q hr; 3-13 q hr graduate credit except for those completing a graduate major in Physiology) Staff
Lect, lab, dem, conf
General cellular physiology and biophysics; physiology of nerve, muscle, central nervous system, respiratory, cardiovascular, renal, gastrointestinal and endocrine systems.

341-A. Principles of the E. C. G. (1 q hr) Angle, 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. Biostatistics (1 q hr) 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 (1 q hr) 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 (1 q hr) 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 (1 q hr) 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.

349-B. Introduction to Computers in Medicine (1 q hr) Stratbucker
Periods offered: Summer and Spring Quarters, first 4 weeks
3 hours 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 hr per q, max 12) Staff
Prereq Physiol 310 and 320 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 hr) Staff
Prereq Physiol 310 and 320 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) Angle
Prereq Physiol 310 and 320 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) Stratbucker
Prereq Physiol 310 and 320 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) Lim, Paustian, Tobin, Ware, Weidler, Wolf
Prereq Physiol 351
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) Bennett, Stratbucker, Ware, Weidler
Prereq Physiol 351
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) Angle, Stratbucker, Ware
Prereq Physiol 351

362. Advanced Respiratory Physiology (1-9 q h cr) Lim, Ware
Prereq Physiol 351

363. Advanced Renal Physiology (1-9 q h cr) Ware, Wolf
Prereq Physiol 351

364. Advanced Gastrointestinal Physiology (1-9 q h cr) Paustian
Prereq Physiol 360

365. Advanced Neurological Physiology (1-9 q h cr) Bennett, Ellingson, Rose, Weidler
Prereq Physiol 360

370. Biomedical Instrumentation (1-5 q h cr; except for those completing a graduate major in Physiology) Haack, Stratbucker
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) Angle, Myers
Prereq Physiol 352 and 353 or special permission
Study of electrostatic, magnetostatic, and electrodynamic physiological mechanisms and various traveling wave phenomena in physiology.

372. Application of Linear Systems Analysis and Control Theory in Physiology (1-9 q h cr) Angle, 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) Angle, Stratbucker
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 mechanisms and use of computers to plan and control laboratory experimentation.

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

These courses aim to give the students basic orientation and preparation related to physician's increasingly important responsibilities in preventing disease, promoting efficiency, acting as health counsellors and serving as community leaders in health matters.

Preventive Medicine.—72

320. Principles of Preventive Medicine (4.8 q h cr: 2 hrs weekly, I; 1 hr weekly for eight weeks, II; 2 hrs weekly, III)

Fundamentals of epidemiology as applied to the infectious diseases. Introduction to statistical analysis; community health, occupational and environmental health; economics of health care.

Psychiatry

Courses are planned to give the student, commencing in his freshman year, correlated, 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 I, II, III; 1 hr weekly) Burrows, Strider, Affleck, Williams

This course consists essentially of two sections. The first section constitutes an introduction to the behavioral sciences. This sequence surveys basic concepts in the behavioral sciences, methods of studying behavior, and the general adaptation of the organism to environment and culture. The second section will cover the mental health aspects of human development. The range of normal and abnormal emotional and interpersonal functioning will be outlined as it refers to both the "normal" population and the psychiatric population in our society. Some initial concepts and perspectives preparing the medical student for the role of a mental health practitioner receive central emphasis.

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.
Clinical Clerkship (8 q hr 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 (5 q hr; 4 weeks) 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 (5 q hr; 4 weeks) 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 (5 q hr; 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 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 (5 q hr; 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 (5 q hr; 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 (5 q hr; 4 weeks) Menolascino
Periods offered: All 4 quarters; 4, 8, or 12 weeks; full time or half time
Student limit: By arrangement
Prereq 2nd, 3rd, 4th year

346-A. Office Psychiatry (5 q hr; 4 weeks) Peterson
Periods offered: All 4 quarters; 4, 8, or 12 weeks; full or half time
Student limit: 2 per 4-week period
Prereq 2nd, 3rd, 4th year

346-B. Hospital Psychiatry Practice NPI (5 q hr; 4 weeks) Bartholow
Periods offered: All 4 quarters; 4, 8, or 12 weeks; full or half time
Student limit: 8 per 4-week period
Prereq 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) Bartholow
Periods offered: All 4 quarters; 4, 8, or 12 weeks; full or half time
Student limit: 8 per 4-week period
Prereq 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.
PSYCHIATRY

346-D. Alcohol and Drug Problems (5 q h cr; 4 weeks) Blase
   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
   Studies in treatment and prevention of alcoholism and drug addiction. Lectures, demonstrations, seminars. Clinical work with adult inpatients and outpatients and with various community facilities.

346-E. Psychiatric Problems of Adolescents (5 q h cr; 4 weeks) Kenney
   Periods offered: All 4 quarters; 4, 8, or 12 weeks; full or half time
   Student limit: 2 per 4-week period
   Prereq 2nd, 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) Staff
   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) Muffy
   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, and clinical experience on the Liaison Service of the Nebraska Psychiatric Institute. Students will work with patients who have certain psychological and physical problems.

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

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

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

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.

306. Business and Administration Problems for the Occupational Therapist (1 q h cr) Peck
   Prereq Open only to qualified students in the fields related to psychiatry and upon approval of the instructor
   A general study of the business and administrative aspects of an occupational therapy department, including budgeting, bookkeeping, and other matters pertaining to the handling of hospital funds. Also presented are principles of organizational plans, policies, reports, and records utilized in the hospital setting.

350. Psychiatric Concepts (3 q h cr) Tunakan
   Prereq Open only to qualified graduate students in an approved master's program and upon approval of instructor
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
Pre_req: 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 (2 q h cr each II, III—total 4)
Eaton
Pre_req: 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 will discuss 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—total 4) Starr
Pre_req: 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.

357. Advanced Technics of Psychiatric Occupational Therapy (1-3 q h cr) Peck
Pre_req: Open only to graduate students in occupational therapy in an approved master’s program
A study of technics and therapeutic trends in psychiatric treatment as related to development of new tools and technics of the occupational therapist in the psychiatric treatment program.

359. Seminar in Psychiatric Activity Therapy (2 q h cr per q, max 8) Peck
Pre_req: Open only to graduate students in occupational therapy in an approved master’s program
An intensive study of the role of therapists in an interdisciplinary psychiatric setting. Psychological and sociological assessment of the dynamics of human behavior in various interpersonal relationships in which therapeutic activity is used as the modus operandi. Current theories of therapeutic activity are considered.

360. Field Instruction in Psychiatric Occupational Therapy (8-12 q h cr, total 12) Peck
Pre_req: Psych 305 and 350; graduate standing and permission
Directed observation and participation in the occupational therapy clinics or other psychiatric agencies and facilities which demonstrate representative practices in psychiatric treatment. Opportunities are provided for students to demonstrate their understanding and abilities as psychiatric occupational therapists in the selected areas of their choice.

361. Field Study (0 cr) Staff

366. Introduction to Group Therapy (2 q h cr per q, max 4; no credit unless second quarter is successfully completed) Eaton
Pre_req: Psychiatry 304 and graduate standing in an approved master’s program for psychiatric occupational therapy or nursing, and permission. Other candidates for advanced degrees by permission
Lectures on group therapy. Directed observation and participation as a co-leader in psychotherapy.

368. Clinical Child Psychology for School Psychologists (3 q h cr)
Pre_req: 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.

398. Master’s Thesis (9-15 q h cr)
399. Doctoral Thesis (cr arr)
Electives.—

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; no credit unless second
   quarter is successfully completed)
   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.

303. Emotional Development in Childhood (2 q h cr per q—total 4; no credit unless
   second quarter is successfully completed) Starr
   Prereq 6 sem hrs psychology or educational psychology. Open only to qualified
   students in the fields related to psychiatry and upon approval of the instructor.
   A psychiatric review of the theories of emotional, mental, social and intellectual
   development of children with emphasis on those psychological (particularly
   family) forces creating disturbances in development. Child patients and their
   families are clinically interviewed to demonstrate diagnostic and psychotherapeutic
   procedures.

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; relationship of Group Dynamics to administration supervision
   and teaching.

Radiology

Professors Wilson, Chairman, Hunt, Meadows, Pederson; Associate Professors
James, Jones, Salcheck; Assistant Professors Adkins, Bolamperti, Bunting, Dobry,
Harned, G. Johnson, Mundt, Qualiffe; Instructors Mulry, Novak; Assistant Instructor
Dworak; Lecturer McMillan; Senior Consultant 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 technics 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
instruction to groups of four to eight students is conducted through film reading ses-
sions, group conferences, and tumor clinics.

RADIOLOGY.—76

Radiological Anatomy.—

Taught as part of Gross Anatomy

320. Principles of Radiology (1 q h cr 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: 4 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 (5 q h cr)
   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 tech-
   niques. Radiation therapy case presentation and lectures are planned on a
   weekly basis.
346-C. Nuclear Medicine (5 q h cr)

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 biologic and radiation considerations are related to the conduct of the routine individual interests within the overall framework of the elective.

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.

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 Physiol 310, 320, Radiol 320, and consent of department

Laboratory assignment in nuclear technology and utilization of radioisotopes in basic medical science and in clinical procedures.

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

399. Doctoral Thesis (cr arr)

**Surgery**

Professors Musselman, Chairman, W. C. Davis, Finlayson, Hodgson, J. R. Jones, McLaughlin, Skultety, W. W. Webster; Research Professor J. G. L. Williams; Associate Professors Barmore, Browne, Brush, Burkland, Coe, J. B. Davis, Ferlic, German, G. N. Johnson, Kennedy, D. M. Miller, Nils, Potter, Rasmussen, Rees, Sellers, Swenson, D. H. Thompson, C. E. Wilson; Assistant Professors Black, Brauer, Cuka, Frank, Gillespie, Karrer, Kimball, Latenser, Mota, Pester, Porter, Rath, Sasse, Schultz, Singer, Stephenson, Therien, L. W. Thompson, Watland; Clinical Assistant Professors Cherry, Davies, R. O. Garlinghouse, Gogela, Hilton; Associates L. L. Anderson, Cochran; Clinical Associate Cole; Instructors Berman, Brett, Bruce, Gordon, Greene, Hanisch, Kutter, Melcher, Newland, O'Gara, G. L. Quast, J. W. Smith, L. D. Smith, L. R. Smith, Stroy, Walling, Westfall; Clinical Instructors Ehrlich, Ficker, LeWorthy, Moessner, Wiedman; Assistant Instructors Dillow, McManus, Miller, Olson, Panzer, Todd; Clinical Assistant Brinkman; Senior Consultant Bisgard, Keegan, Morton, Reese; Emeriti Best, H. H. Davis, H. L. Davis, Irons, Shearer, Waters.

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 interdepartmental, 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 (8 q hr cr)
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 consideration 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 technics, observing the principles of operations, and correlating the operative findings with the clinical findings.

334. Junior-Senior Neuroscience Hospital Clerkship (Neurology 334) (4 q hr cr)
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 (5-10 q hr cr; each 4 weeks, 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 (5 q hr cr)
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 (5 q hr cr; each 4 weeks)
Opportunity to gain understanding of preoperative evaluation and preparation of patients for anesthesia, clinical pharmacology of adjunctive drugs and anesthesia agents, respiratory physiology, principles of resuscitation, care of the unconscious patient, inhalation therapy, and approaches to control of pain.

B. General Surgery Clerkships (5-10 q hr cr; each 4 weeks, 4 or 8 weeks)
Affiliated hospitals: Bishop Clarkson Memorial, Immanuel, Nebraska Methodist. In-hospital clerkship supervised by designated active members of the faculty.

C. Emergency Medical Services (5 q hr cr; 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 (5 q hr cr; each 4 weeks)
Elective clerkship in neurosurgery supplementing the required neuroscience clerkship.

E. Pediatric Surgery (5 q hr cr; each 4 weeks)
F. Thoracic and Cardiovascular Surgery (5 q hr cr; each 4 weeks)
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 (5 q h cr; each 4 weeks)
B. Off-Campus Anesthesiology (5 q h cr; each 4 weeks)
C. Off-Campus Neurosurgery (5 q h cr; each 4 weeks)

349. Research in Surgery (5 q h cr)

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.—

Introduction to Clinical Medicine (Total 12 hrs, Period 3)
This course for sophomores is held weekly, jointly with the Department of Internal Medicine. A member of each department is present, and together they discuss such subjects as aging and involution, diseases of medical progress, shock, fever, reaction to injury, and stress.

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. Emphasizes the relation of anatomy, biochemistry, pathology, physiology, and microbiology to surgical problems.

351. Operative Technic (4 q h cr) Musselman, Staff
   Prereq Permission
   Introduction to aseptic operative technique. Preparation of laboratory animals for physiological and technical studies.

351. 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.
Urology

Professor Leroy W. Lee, Chairman; Associate Professors Bartone, Vice Chairman, Kammandel, Malashock; Assistant Professor Mardis; Clinical Assistant Professor Munger; Clinical Instructor Gilbert; Emeritus Owens.

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 and Douglas County Hospital. They conduct investigative research in various subjects of urological interest.

UROLOGY.—84

Ward Clinics (2 hrs weekly when on Surgery Clerkship)

Students are given bedside ward clinics using patients at the University Hospital to illustrate major disease entities encountered in medical practice.

346. Urology Clerkship (5 q h cr each 4 weeks) Preceptors Bartone, Kammandel, L. W. Lee, Mardis, Malashock

Student Limit: 3

Genito-urinary tract disease—recognition, diagnostic approach, and management—is the focus of this clerkship. Practice in an office, hospital, and clinic gives a view of all facets of urology. Students may also elect a period of time in the outpatient urological clinic.
BACCALAUREATE PROGRAM IN MEDICAL TECHNOLOGY

Department of Pathology

ARTHUR L. LARSEN, B.A., M.D.
Associate Professor of Pathology and Director

ARDEN ENGSTROM LARSON, B.S., M.S., M.T. (ASCP)
Instructor in Pathology and Educational Coordinator

MARY JEAN LONG, Ph.D., M.T. (ASCP), Assistant Professor of Pathology

WILLIAM G. PADGETT, B.S., M.S., M.T. (ASCP), Instructor in Pathology

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 267 beds, and patients are accepted from all over the state. All types of diseases are treated under the direction of the
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 below D 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 Financial Aids of the University of Nebraska in Lincoln.

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

Applications.—Forms for applications can be obtained from the Educational Coordinator. Transcripts of both high school and college work, accompanied by a small recent photograph or snapshot, must be submitted with the completed forms. An accompanying letter must list courses in progress.

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 $150 a year for a resident student and $280 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:

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

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

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
CLINICAL MICROSCOPY.—General aspects of analysis of urine, gastric contents and other body fluids are discussed. 1 credit

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

PROFESSIONAL TOPICS.—An introduction to laboratory organization and management is presented, including principles of supervision and education. 1 credit

INTRODUCTION TO CLINICAL LABORATORY SPECIALTIES.—Basic concepts of radioisotopes, histologic technic, cytology, virology, and quality control are discussed. 1 credit

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:

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 technics. 6 credits (18 weeks)

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)

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)

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

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)

HISTOLOGIC TECHNIC.—The student learns methods of preparing tissues for microscopic examination, including fixation, sectioning, and staining. 1 credit (1½ weeks)
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)

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. (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, B.S., M.S., 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 technics 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)
Utrastructural 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 36.

A resident student who registers for less than 12 quarter hours will be charged $12.00 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.

Scholarships.—Through a grant provided by the United States Public Health Service, Division of Chronic Disease Control, a scholarship student stipend is available.

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

Starting Date.—The program is offered yearly beginning June 1.
TRAINING COURSES FOR RADIOLOGIC TECHNOLOGISTS

WILLIAM J. WILSON, M.D.
Foundation Professor and Chairman, Department of Radiology

HOWARD B. HUNT, M.A., M.D.
Director, Eppley Radiation Center
Professor of Radiology

PAUL M. MEADOWS, M.D.
Eppley Professor of Radiotherapy

RICHARD A. BOLAMPERTI, B.S., M.D.
Assistant Professor of Radiology

CHARLES A. DOBRY, M.D.
Assistant Professor of Radiology

ROGER K. HARNED, M.D.
Assistant Professor of Radiology

MERTON A. QUAIFE, M.D., M.S.
Director, Nuclear Medicine

ERNEST O. JONES, Ph.D.
Associate Professor of Biophysics

JOHN G. McMillan, B.S., M.A.
Consultant in Radiation Physics

MICHAELA ANN WASINGER, R.T.
Chief Technologist

CARL DWORAK, B.S., R.T.
Radioisotope 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). Two 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, 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 Chairman of the 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 $25 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 $30. 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 generosity of the W. K. Kellogg Foundation. Information concerning loans can be secured from the Director.

General Information.—All students are accepted on a probationary basis during the first three 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. 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.

The following courses are required for candidates for the Certificate in Radiologic Technology.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy</td>
<td>4</td>
</tr>
<tr>
<td>Physiology</td>
<td>4</td>
</tr>
<tr>
<td>Principles of Radiology</td>
<td>2</td>
</tr>
<tr>
<td>Office Procedures</td>
<td>1</td>
</tr>
<tr>
<td>Physics</td>
<td>3</td>
</tr>
<tr>
<td>Principles of Nursing</td>
<td>1</td>
</tr>
<tr>
<td>Medical Nomenclature</td>
<td>1</td>
</tr>
<tr>
<td>Radiographic Technique</td>
<td>30</td>
</tr>
<tr>
<td>Radiotherapeutic Technique</td>
<td>5</td>
</tr>
<tr>
<td>Radioisotopic Technique</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>56</strong></td>
</tr>
</tbody>
</table>

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</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>College English</td>
<td>6</td>
</tr>
<tr>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td>Special Procedure Radiographic</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

The following courses are required for candidates for the Bachelor of Science degree for certification in radiologic technology: The basic course described above for certification in radiologic technology is acceptable for credit of 56 hours.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiologic Technology</td>
<td>56</td>
</tr>
<tr>
<td>English or Public Speaking</td>
<td>6</td>
</tr>
<tr>
<td>Physics</td>
<td>6</td>
</tr>
<tr>
<td>Biology</td>
<td>10</td>
</tr>
<tr>
<td>Psychology</td>
<td>6</td>
</tr>
<tr>
<td>Electronics</td>
<td>3</td>
</tr>
<tr>
<td>Economies</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry</td>
<td>10</td>
</tr>
<tr>
<td>Business Administration</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>10</td>
</tr>
<tr>
<td>Radiation Physics</td>
<td>6</td>
</tr>
<tr>
<td>Advanced Radiologic Technology</td>
<td>8</td>
</tr>
<tr>
<td>Supervisory Radiologic Technology</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>134</strong></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>Course</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English or Public Speaking</td>
<td>6</td>
</tr>
<tr>
<td>Physics</td>
<td>6</td>
</tr>
<tr>
<td>Psychology</td>
<td>6</td>
</tr>
<tr>
<td>Elective</td>
<td>10</td>
</tr>
<tr>
<td>Radiation Physics</td>
<td>6</td>
</tr>
</tbody>
</table>

28
Courses for candidates in radiologic technology and radioisotopic technology are indicated below. Qualified special students enrolled in radioisotopic 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.

(1) 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.

(2) PHYSIOLOGY.—Lectures, demonstrations, and laboratory dealing with the functions of the human body. Required of B.S. candidates. 4 cr. hrs.

(3) 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.

(4) 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.

(5) a. BASIC RADIATION PHYSICS.—Production, characteristics, and control of radiation as applicable to radiographic technic and radiotherapy. 3 cr. hrs.

b. 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.

c. 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.

(6) a. ELEMENTARY RADIOGRAPHIC TECHNOLOGY.—Demonstration of anatomical positioning and adaptation of radiographic exposure to the more common radiographic examinations. 10 cr. hrs.

b. INTERMEDIATE RADIOGRAPHIC TECHNOLOGY.—Supervised application of above principles by the student in the conduct of routine radiographic procedures. 20 cr. hrs.

c. SPECIAL PROCEDURE TECHNOLOGY.—Supervised technical participation in neuroradiology, angiocardiology, selective angiography, and planigraphy. 6 cr. hrs.
d. **ADVANCED RADIOLOGIC TECHNOLOGY.**—Continued application of current advances in radiographic technology including special procedures, tomography and standard radiographic techniques. 8 cr. hrs.

e. **SUPERVISORY RADIOLOGIC TECHNOLOGY.**—Techniques in management of a radiographic department, personnel management, and equipment of maintenance and procurement. 4 cr. hrs.

(7) a. **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.

b. **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.

(8) a. **BASIC NUCLEAR MEDICINE TECHNOLOGY.**—Supervised experience in instrumentation and laboratory procedures. 5 cr. hrs.

b. **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.

c. **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.

d. **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.

e. **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.

(9) RADIATION PHYSICS.—Advanced radiation physics to include nuclear medicine, high energy particle physics, and advanced diagnostic radiographic physics. 6 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. Radioisotopic technologists find opportunities both in clinical laboratories 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.
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. Childrens Rehabilitation Institute
14. Hattie B. Munroe Home
15. Bishop Clarkson Memorial Hospital
16. Childrens Memorial Hospital
17. Nebraska Psychiatric Institute
18. Memorial Research Laboratories
19. Steam and Power Plant
20. Services Building
21. Child Saving Institute
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