

CREIGHTON UNIVERSITY BULLETIN

1996-98 ISSUE

GRADUATE SCHOOL

This publication contains the most current information available on the subjects covered as of the time of publication. However, this publication is not an offer to enter into a contract. The University reserves the right to change any provision or requirement at any time. See page 29.

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To The Prospective Student

Creighton's Graduate School provides an administrative vehicle for collaboration by senior faculties from four of the seven other schools and colleges of the University in offering opportunities for advanced study and research to college graduates. Approximately eleven percent of all Creighton degrees awarded have been, and continue to be, graduate degrees.

We have aided large numbers of teachers, counselors, school administrators, business executives, nurses, ministers and religious leaders by offering Master's degrees for their professional and personal development. Our solid traditional programs have provided the initial direction for graduates' achievement in research, teaching and technical careers.

We also have a substantial number of doctoral students who pursue studies in Biomedical Sciences, Pharmacology or Medical Microbiology and Immunology. These programs provide a solid base for a research career and aim to produce scientists of the highest caliber.

The common ingredients for success that our graduate degree recipients have possessed are a natural curiosity, a capacity for self-discipline and a personal commitment to habitual inquiry. These qualities, when cast with the experience and dedication of senior faculty mentors, work toward an imaginative recasting of the ideas requisite to successful research and development of human knowledge. Graduate studies at Creighton (a) embrace the ideal of a university as a community of scholars, (b) offer an opportunity for discovery born of disciplined inquiry, and (c) cultivate a person-centered environment, which can be the doorway to a stimulating, creative and meaningful life.

The decision to enter graduate study must be a personal one. Persons with genuine intellectual ability and commitment to self-discipline are encouraged to explore the opportunities graduate school can provide. Superior intellectual ability combined with individual initiative is a scarce and valued human resource.

We invite you to visit with our graduate professors and students as you explore your interests in graduate study. We would be pleased to demonstrate our strengths and explain our limitations to prospective graduate students as a matter of personal and community concern.

Cordially,

BARBARA J. BRADEN, Ph.D.
DEAN, GRADUATE SCHOOL

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CALENDAR

SUMMER SESSIONS, 1996

May	15, <i>Wednesday</i>	On-campus registration for Term 1B: 4:00-5:30 P.M., Registrar's Office. (Term meets May 15-June 29).
	17, <i>Friday</i>	Last day for Term 1B registration and course changes.
	20, <i>Monday</i>	On-campus registration for Pre-session: 8:00-10:00 A.M. Registrar's Office. Pre-Session classes begin 10:00 A.M.
	21, <i>Tuesday</i>	Last day for Pre-Session registration and course changes.
	24, <i>Friday</i>	Last day to change from credit to audit or apply for pass/no pass status for Pre-Session.
	27, <i>Monday</i>	Memorial Day—No classes.
	31, <i>Friday</i>	Last day to withdraw from Pre-Session with "W".
June	7, <i>Friday</i>	Pre-session final examination; Pre-session ends.
	10, <i>Monday</i>	On-campus registration for Term 1. 8:30-11:30 A.M. and 1:00-3:00 P.M., Registrar's Office. 4:00-5:30 P.M., Registrar's Office for evening students only. Term 1 classes scheduled for 6:00 p.m. on Monday begin on June 10. All other classes begin at regularly scheduled times beginning June 11. First Christian Spirituality term begins (to July 3).
	13, <i>Thursday</i>	Last day for late registration and course changes for Term 1.
	17, <i>Monday</i>	Last day to change from credit to audit or to apply for pass/nopass status for Term 1.
	20, <i>Thursday</i>	Last day for filing applications for degrees to be conferred at end of Summer Sessions.
July	1, <i>Monday</i>	Last day to withdraw from Term 1 course with a "W".
	2, <i>Tuesday</i>	On-campus registration for Term 2B: 8:30-11:30 A.M. and 1:00-4:00 P.M., Registrar's Office (Term meets July 2-August 16).
	4, <i>Thursday</i>	Independence Day—no classes.
	5, <i>Friday</i>	Last day for Term 2B registration and course changes.
	8, <i>Monday</i>	Second Christian Spirituality term begins (to August 1).
	12, <i>Friday</i>	Final examinations. Term 1 ends.
	15, <i>Monday</i>	Registration for Term 2. 9:00-11:00 A.M. and 1:00-3:00 P.M., Registrar's Office. Term 2 classes meet at regularly scheduled times beginning July 15 at 7:30 A.M.
	16, <i>Tuesday</i>	9:00 A.M. Term 1 final grade reports from instructors due in Registrar's Office from instructors.
	18, <i>Thursday</i>	Last day for late registration and course changes for Term 2.
	22, <i>Monday</i>	Last day to change from credit to audit or to apply for pass/no pass status for Term 2.
August	5, <i>Monday</i>	Last day to withdraw from Term 2 with "W". Final copy of Master's Thesis due in Graduate School Office for those students expecting summer graduate degree conferral.

<i>15, Thursday</i>	Final examinations; Term 2 ends.
<i>16, Friday</i>	Term 2B ends.
<i>19, Monday</i>	9:00 A.M. Term 2 final grade reports from instructors due in Registrar's Office from instructors.

FIRST SEMESTER, 1996-97

1996

August

<i>15, Thursday</i>	4:00-5:30 P.M. Registration for part-time, nontraditional University College students.
<i>17, Saturday</i>	Welcome Week begins. Activities for all new students, freshmen and transfers, are announced in a special brochure. 7:30 P.M. Welcome Week Mass. St. John's Church.
<i>19-20, Mon.-Tue.</i>	8:00-11:30 A.M., 1:00-4:00 P.M. (2:30 P.M. on Tue.). Registration by appointment in the Student Center.
<i>19, Monday</i>	4:30-5:30 P.M. University College and Graduate School registration in the Student Center.
<i>20, Tuesday</i>	2:30 P.M. Late registration fee effective for full-time undergraduate students.
<i>21, Wednesday</i>	Classes begin. Change of schedule fee effective.
<i>21-27, Wed.-Tue.</i>	8:30-11:45 A.M. and 1:00-4:00 P.M. Class Schedule Changes and Late Registration. Registrar's Office.
<i>27, Tuesday</i>	Last day for late registration.

September

<i>2, Monday</i>	Labor Day. Holiday.
<i>11, Wednesday</i>	11:00 A.M. Mass of the Holy Spirit. St. John's Church
<i>19, Thursday</i>	Last day to change from credit to audit. Last day to apply for Pass/no Pass status.

October

<i>1, Tuesday</i>	Last day for filing applications for degrees to be conferred at the end of the First Semester.
<i>12, Saturday</i>	Fall Recess begins after last class, clinic or laboratory.
<i>21, Monday</i>	7:30 A.M. Classes resume.
<i>25, Friday</i>	Last day to withdraw from courses with a "W."

November

<i>26, Tuesday</i>	Thanksgiving recess begins after last class, clinic or laboratory.
<i>28, Thursday</i>	9:00 A.M. Thanksgiving Day Mass. St. John's Church.

December

<i>2, Monday</i>	7:30 A.M. Classes resume.
<i>6, Friday</i>	Final copy of Master's Thesis due in Graduate School Office for those students expecting graduate degrees to be conferred at the end of the First Semester.
<i>9-14, Mon.-Sat.</i>	Final semester examinations.
<i>14, Saturday</i>	Last day of required attendance of First Semester. Christmas-Mid-Year Recess begins.
<i>14, Saturday</i>	Mid-year Commencement.

SECOND SEMESTER, 1996-97

1997

January	9, Thursday	4:00-5:30 P.M. Registration for part-time, nontraditional University College students.
	10, Friday	4:00-5:30 P.M. Registration for part-time, nontraditional University College students.
	13-14, Mon.-Tue.	8:00-11:30 A.M. 1:00-4:00 P.M. (2:30 P.M. on Tuesday). Registration by appointment in the Student Center.
	13, Monday	4:30-5:30 P.M. University College and Graduate School registration in the Student Center.
	14, Tuesday	2:30 P.M. Late registration fee effective for full-time undergraduate students.
	15, Wednesday	Classes begin. Change of schedule fee effective.
	15-21, Wed.-Tue.	8:30-11:45 A.M. and 1:00-4:00 P.M. Class Schedule Changes and Late Registration. Registrar's Office.
	21, Tuesday	Last day for late registration.
February		Mass for Founders' Week: Past, Present, Future. St. John's Church. Date and time to be announced.
	13 Thursday	Last day to change from credit to audit. Last day to apply for Pass/no Pass status.
	17, Monday	Last day for filing applications for degrees to be conferred at end of Second Semester.
March	8, Saturday	Spring recess begins after last class, clinic or laboratory.
	17, Monday	7:30 A.M. Classes resume.
	24, Monday	Last day to withdraw from courses with a "W."
	27, Thursday	Holy Thursday — classes suspended from 5:00 P.M. April 4 to 5:00 P.M., Monday, March 31.
	30, Sunday	Easter Sunday.
	31, Monday	Easter Monday—Classes resume at 5:00 P.M.
May	2, Friday	Final copy of Master's Thesis due in Graduate School Office for those students expecting graduate degrees to be conferred at the end of the Second Semester.
	5, Monday	Final semester examinations begin.
	10, Saturday	Final semester examinations end. Last day of required attendance of Second Semester except for candidates for degrees.
	14, Wednesday	On campus registration for Term 1B: 4:00-5:30 P.M., Registrar's Office. (Term meets May 14-June 1).
	16, Friday	3:00 p.m. Baccalaureate Mass. St. John's Church. Last day for Term 1B registration and course changes.
	17, Saturday	University Commencement.

SUMMER SESSION, 1997

May	19, <i>Monday</i>	On-campus registration for Pre-session: 8:00-10:00 A.M. Registrar's Office. Pre-Session classes begin 10:00 A.M.
	20, <i>Tuesday</i>	Last day for Pre-Session registration and course changes
	23, <i>Friday</i>	Last day to change from credit to audit or apply for Pass/no Pass status for Pre-Session.
	26, <i>Monday</i>	Memorial Day—No classes.
	30, <i>Friday</i>	Last day to withdraw from Pre-Session with "W".
June	6, <i>Friday</i>	Pre-session final examinations; Pre-session ends.
	9, <i>Monday</i>	On-campus registration for Term 1. 8:30-11:30 A.M. and 1:00-3:00 P.M., Registrar's Office. 4:00-5:30 P.M., Registrar's Office for evening students only. Term 1 classes scheduled for 6:00 p.m. on Monday begin on June 9. All other classes begin at regularly scheduled times beginning June 10.
	12, <i>Thursday</i>	Last day for late registration and course changes for Term 1.
	16, <i>Monday</i>	Last day to change from credit to audit or to apply for Pass/no Pass status for Term 1.
	19, <i>Thursday</i>	Last day for filing applications for degrees to be conferred at end of Summer Session.
	30, <i>Monday</i>	Last day to withdraw from Term 1 course with a "W". On-campus registration for Term 2B: 4:00-5:30 P.M., Registrar's Office. (Term meets July 2-August 16).
July	2, <i>Wednesday</i>	Last day for Term 2B registration and course changes. Term 2B begins.
	4, <i>Friday</i>	Independence Day—no classes.
	11, <i>Friday</i>	Final examinations. Term 1 ends.
	14, <i>Monday</i>	Registration for Term 2. 9:00-11:00 A.M. and 1:00-3:00 P.M., Registrar's Office. Term 2 classes meet at regularly scheduled times beginning July 14 at 7:30 A.M.
	15, <i>Tuesday</i>	9:00 A.M. Term 1 final grade reports from instructors due in Registrar's Office from instructors.
	17, <i>Thursday</i>	Last day for late registration and course changes for Term 2.
	21, <i>Monday</i>	Last day to change from credit to audit or to apply for Pass/no Pass status for Term 2.
August	4, <i>Monday</i>	Last day to withdraw from Term 2 with "W". Final copy of Master's Thesis due in Graduate School Office for those students expecting summer graduate degree conferral.
	14, <i>Thursday</i>	Final examinations; Term 2 ends.
	18, <i>Monday</i>	9:00 A.M. Term 2 final grade reports from instructors due in Registrar's Office from instructors.

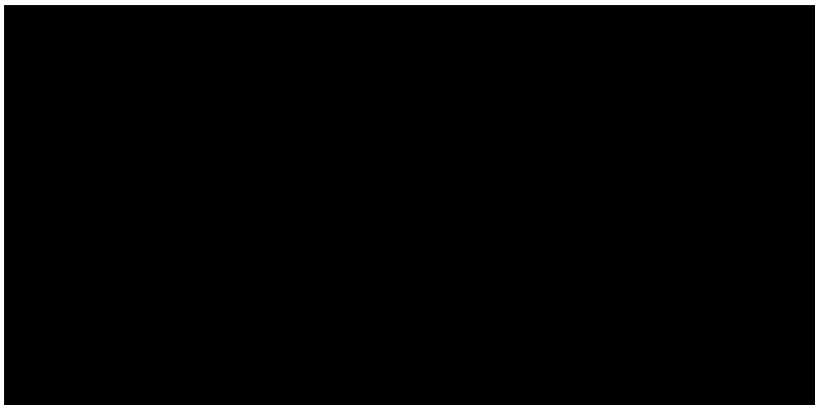
FIRST SEMESTER, 1997-98

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	25-26, <i>Mon.-Tues.</i>	8:00-11:30 A.M., 1:00-4:00 P.M. (2:30 P.M. on Tue.). Registration by appointment in the Student Center.
	26, <i>Tuesday</i>	2:30 P.M. Late registration fee effective for full-time undergraduate students.
	27, <i>Wednesday</i>	Classes begin. Change of schedule fee effective.
	27-Sept 2, <i>Wed.-Tues.</i>	8:30-11:45 A.M. and 1:00-4:00 P.M. Class Schedule Changes and Late Registration. Registrar's Office.
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	18, <i>Thursday</i>	Last day to change from credit to audit. Last day to apply for Pass/no Pass status.
	30, <i>Tuesday</i>	Last day for filing applications for degrees to be conferred at the end of the First Semester.
October	11, <i>Saturday</i>	Fall Recess begins after last class, clinic, or laboratory.
	20, <i>Monday</i>	7:30 A.M. Classes resume.
	24, <i>Friday</i>	Last day to withdraw from courses with a "W"
November	25, <i>Tuesday</i>	Thanksgiving recess begins after last class, clinic or laboratory.
	27, <i>Thursday</i>	9:00 A.M. Thanksgiving Day Mass. St. John's Church.
December	1, <i>Monday</i>	7:30 A.M. Classes Resume.
	6, <i>Friday</i>	Final copy of Master's Thesis due in Graduate School Office for those students expecting graduate degrees to be conferred at the end of the First Semester.
	15-20, <i>Mon.-Sat.</i>	Final semester examinations.
	20, <i>Saturday</i>	Last day of required attendance of First Semester. Christmas-Mid-year Recess begins.
	20, <i>Saturday</i>	Mid-year Commencement.

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	<i>13, Tuesday</i>	2:30 P.M. Late registration fee effective for full-time undergraduate students.
	<i>14, Wednesday</i>	Classes begin. Change of schedule fee effective.
	<i>14-20, Wed.-Tue.</i>	8:30-11:45 A.M. and 1:00-4:00 P.M. Class Schedule Changes and Late Registration. Registrar's Office.
	<i>20, Tuesday</i>	Last day for late registration.
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	<i>12, Thursday</i>	Last day to change from credit to audit. Last day to apply for Pass/no Pass status.
	<i>16, Monday</i>	Last day for filing applications for degrees to be conferred at end of Second Semester.
March	<i>7, Saturday</i>	Spring recess begins after last class, clinic or laboratory.
	<i>16, Monday</i>	7:30 A.M. Classes resume.
	<i>23, Monday</i>	Last day to withdraw from courses with a "W."
April	<i>9, Thursday</i>	Holy Thursday—classes suspended from 5:00 P.M. March 27 to 5:00 P.M. Monday, April 13.
	<i>12, Sunday</i>	Easter Sunday.
	<i>13, Monday</i>	Easter Monday. Classes resume at 5:00 P.M.
May	<i>1, Friday</i>	Final copy of Master's Thesis due in Graduate School Office for those students expecting graduate degrees to be conferred at the end of the Second Semester.
	<i>4, Monday</i>	Final semester examinations begin.
	<i>8, Saturday</i>	Final semester examinations end. Last day of required attendance of Second Semester except for candidates for degrees.
	<i>15, Friday</i>	3:00 P.M. Baccalaureate Mass. St. John's Church.
	<i>16, Saturday</i>	University Commencement.



ADMINISTRATION

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- MR. PATRICK J. ZENNER *President and Chief Executive Officer, Hoffmann-La Roche, Inc.*

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WILLIAM H. HILL, M.A.	<i>Associate Vice President for Administration and Director of Human Resources</i>
LEROY F. KOZENY, B.S.	<i>Associate Vice President for Administration and Director of Purchasing</i>
STEPHANIE R. WERNIG, M.A., Ph.D.	<i>Associate Vice President for Student Services</i>
WILLIAM L. PANCOE, JR., Ph.D.	<i>Associate Vice President for Health Sciences</i>
FRED H. SALZINGER, M.S.	<i>Associate Vice President for Health Sciences</i>
PATRICIA R. CALLONE, M.A., M.A.Rel.Ed.	<i>Assistant to the President</i>
WILLIAM F. CUNNINGHAM, JR., M.A., Ph.D.	<i>Special Assistant to the President</i>
MARTHA L. BROWN, M.C.	<i>Assistant Vice President for Student Services; Director of Retention</i>
DAVID C. HIGGINSON, M.S., Ed.D.	<i>Assistant Vice President for Academic Affairs/Director of International Programs</i>
GREG JAHN, J.D.	<i>General Counsel</i>
REV. WILLIAM F. KELLEY, S.J., M.A., Ph.L., S.T.L., Ph.D.	<i>Assistant Vice President, Creighton University Foundation</i>
RICHARD E. ROSSI, M.A., Ph.D.	<i>Assistant Vice President for Student Services/Residence Life</i>
JAMES R. RUSSELL, B.A.	<i>Associate Vice President for Administration</i>
JAMES G. WILLETT, M.S.	<i>Associate Vice President for Administra- tion and Director of Facility Planning/ Management</i>
LLOYD E. BEASLEY, M.S.	<i>Director of Educational Opportunity Activities</i>
DANIEL E. BURKEY, B.S.B.A., C.P.A.	<i>Controller</i>
CHARLES T. DICKEL, B.A., M.S., Ed. D.	<i>Director of Teacher Placement</i>
JODY I. CONWAY, M.A.	<i>Assistant Dean of Students</i>
DENNIS R. DIXON, M.S., Ed.D.	<i>Director of Drug and Alcohol Education</i>
RUTH B. PURTILO, Ph.D., FAPTA	<i>Director, Center for Health Policy and Ethics</i>
Laurie R. VINDUSKA, M.S.	<i>Director of Admissions</i>
CHARLENE G. ERSKINE, M.Ed., Ph.D.	<i>Director of University Counseling Center</i>

JOAN S. S. SHORMA, B.A., M.A., LT., U.S.A.	<i>Commandant of ROTC</i>
TROY E. HORINE, M.B.A.	<i>Director of Development</i>
BRUCE HOUGH, M.A., Ph.D.	<i>Director of Center for Instructional Technology</i>
ROWLAND W. HUGHES, B.S.	<i>Director of Student Center</i>
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AUDREY LARKIN, M.S.	<i>Director of Academic Computing Center</i>
ROBERT LEAHY, B.S.B.A.	<i>Director of Student Accounts</i>
CHARLES A. LENOSKY, B.A.	<i>Director of Biomedical Communications</i>
JANA M. MARTIN, B.S.	<i>Director of Public Relations and Information</i>
RICHARD J. MCAULIFFE, M.S.	<i>Director of Public Safety</i>
MICHAEL J. LACRIOX, M.L.S., M.B.A.	<i>Director of Reinert Alumni Memorial Library</i>
DEBRA SAURE, B.S., R.N.C.N.P.	<i>Director of Student Health Services</i>
BRUCE RASMUSSEN, B.S.B.A.	<i>Director of Athletics</i>
CARL L. MORELLO	<i>Director of Environmental Services</i>
RICARDO M. ARIZA, M.S.W.	<i>Coordinator of Cultural Activities</i>
EDWARD D. MURPHY, B.S.C.	<i>Risk Manager</i>
FRED J. NESLER, M.B.A.,	<i>Budget Director</i>
PAUL NICHOLS, B.S.	<i>Director of Environmental Health and Safety</i>
MARSHA PAYNE, M.B.A.	<i>Director of Internal Audit</i>
JOHN E. PIERCE, M.S.Guid., J.D.	<i>Director of Affirmative Action</i>
ROBERT W. RAUSCHER, M.A.	<i>Director of Administrative Computing Center</i>
J. C. RUCH, M.S.	<i>Director of Technical Services and Operations</i>
CONNIE SHONKA, B.S.	<i>Director of Child Care Center</i>
KATHLEEN J. TAGGART, B.S.	<i>Director of Grants Administration</i>
JOHN D. WALKER, B.P.S.	<i>Director of Mail Services</i>
ROBERT D. WALKER, M.S.	<i>Director of Student Financial Aid</i>
MARJORIE B. WANNARKA, M.A.	<i>Chairman, Archives Department, Reinert Alumni Memorial Library</i>
DIANE H. DOUGHERTY, M.A.	<i>Acting Director of Alumni Relations</i>

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Mag. Litt., (Cantab.), Cert. Med. Eth., *Dean*
PHILIP J. MEEKS, Ph.D., *Associate Dean*
JACK E. WALSH, Ed.M., M.A., *Assistant Dean*

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Officers of Administration

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VASANT H. RAVAL, M.B.A., D.B.A., C.I.S.A., *Associate Dean*
DEBORAH L. WELLS, M.S., Ph.D., *Assistant Dean*

SCHOOL OF NURSING

Officers of Administration

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THE GRADUATE SCHOOL

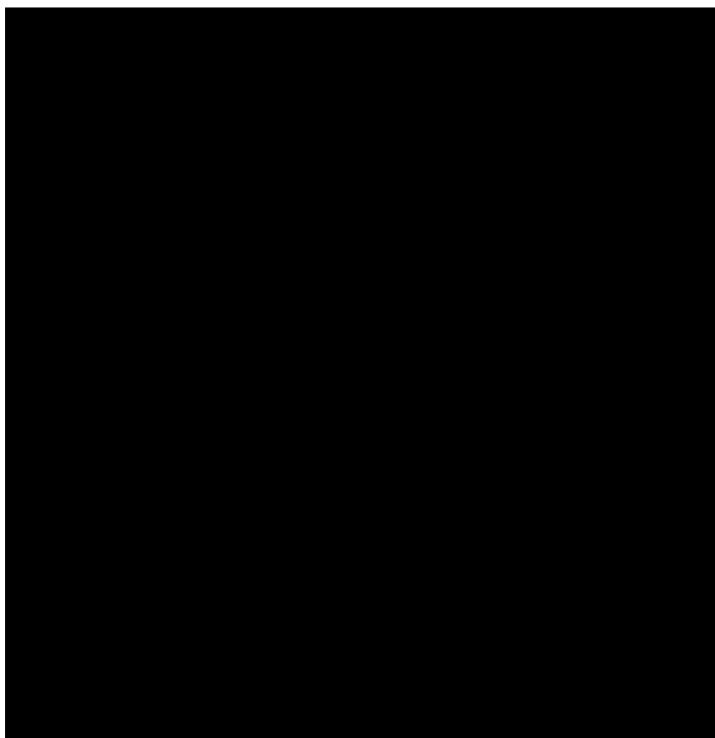
BARBARA J. BRADEN, Ph.D., *Dean*

Board of Graduate Studies

Dean of the Graduate School, Chair

Twelve Faculty Representatives

Two Student Representatives



Barbara J. Braden, *Dean of the Graduate School*

GENERAL INFORMATION

Creighton University is by far the most diverse educational institution of its size in the nation. The combination of relatively small size and unusual diversity is the key to appreciation of Creighton University's excellence.

With an enrollment of 6,424 persons taught by a faculty of 1,310, Creighton has set as its goal the conduct of higher education in the context of Christian values.

Founded in 1878, Creighton is co-educational, independent, and has always been operated by the Jesuits in the traditions of that Catholic religious order. Creighton has a faculty and student body made up of individuals of many races and faiths from every geographical region of the United States, and from numerous foreign nations.

Creighton is a university in the true sense. In addition to the School of Pharmacy and Allied Health Professions, Creighton includes the College of Arts and Sciences, College of Business Administration, University College, Schools of Dentistry, Medicine, Law, and Nursing, and a Graduate School offering Master's and Doctor's degrees. Creighton has been active in the establishment of continuing education programs, and of a Summer Session of modern design for the contemporary educational consumer. The University College offers undergraduate degree and certificate programs for part-time students, and specializes in noncredit offerings for adults.

Thirty-six percent of the University's students are enrolled in the College of Arts and Sciences, 25 percent in the health sciences professions, 11 percent in Business Administration, 9 percent in University College, 10 percent in law, and 9 percent in the Graduate School.

LOCATION

Creighton's campus is located on the northwest edge of downtown Omaha, Nebraska. The University's planned campus of nearly 78 acres is near, yet apart from, the city's urban center.

Omaha is a city of 342,862 that serves as a regional center. The city is the major urban area between Chicago and Denver, and between Kansas City and Minneapolis. The center of a metropolitan area of 662,801 persons, Omaha has rolling hills and tree-lined streets.

Food processing and international marketing is Omaha's leading industry, with 50 percent of the city's payroll in food-related businesses. Yet, there is ample evidence that the community has a broad industrial base, with insurance, railroads, telecommunications, and creative enterprises contributing to diversification. In addition, Omaha is a major health-care center with 17 hospitals, the largest pediatric hospital between Denver and Chicago, and two university-based medical and research centers.

Omaha's civic pride is evidenced in the excellence of its cultural institutions. An outstanding art museum, a quality performing arts center, the Omaha Playhouse, and Civic Auditorium serve as homes for outstanding exhibitions and performances; the Omaha Symphony Orchestra, the Omaha Ballet Company, and the Omaha Opera Company provide a full season of local productions.

Omaha's setting as a regional center may account for the superiority and diversity of restaurants and dinner theaters; the community's proximity to agriculture may account for the relatively inexpensive cost of living.

Omaha is the site of a vital downtown area. Omaha's Missouri Riverfront has undergone a massive redevelopment supported by private and public funds. ConAgra, Inc., a multi-billion dollar food processor, has built its headquarters operation, complete with a research facility, on the riverfront. The City of Omaha is extending its downtown Central Park Mall to the riverfront. New development also includes a consolidated operations center for Union Pacific Railroad, and a major computer center for US WEST Communications.

Omaha is served by over 160 regularly scheduled flights by eleven major airlines plus five commuter airlines and by four class-one railroads. Two interstate highway systems serve the metropolitan area—I-80 going east and west, and I-29 north and south.

HISTORY

John and Edward Creighton, builders of the transcontinental telegraph that linked pioneer America, have given their name to the University.

Edward's widow, Mary Lucretia Creighton, carrying out her husband's wishes, left money and directions for establishing a college in his memory. Following her death on January 23, 1876, the present University site was purchased and the first Bishop of Omaha, the Right Reverend James O'Connor, D.D., invited the Jesuits to conduct the Creighton College.

One priest, three scholastics, a layman and a woman formed the faculty when classes began September 2, 1878. On August 14, 1879, Bishop O'Connor surrendered his trust to a new corporation, The Creighton University.

Jesuits were exclusive managers of the corporation until, in October 1968, the Board of Directors was expanded to include laypersons. Today nineteen laypersons and ten Jesuits conduct the corporate affairs of Creighton University.

The early growth of Creighton University and the enlargement of its endowment were due mainly to the benefactions of John A. Creighton and his wife, Sara Emily Creighton.

The College of Arts and Sciences, the University's oldest and largest division, was founded in 1878. The College of Business Administration opened on September 20, 1920. The Graduate School was established as a separate division in 1926. Nursing programs began at Creighton in 1928, a separate College of

Nursing was established in 1971 and in 1978, became the School of Nursing. The University College, which opened in the 1983 Fall Semester, offers credit and noncredit programs and correspondence courses for adult students. Professional schools and their dates of establishment are the School of Medicine, 1892. School of Law, 1904; School of Dentistry and School of Pharmacy, 1905. In 1982, the Creighton University School of Pharmacy became the Creighton University School of Pharmacy and Allied Health Professions. A baccalaureate program in Occupational Therapy was initiated in 1985. In 1991, the School's faculty voted unanimously to adopt the Doctor of Pharmacy as the sole entry level pharmacy degree, which became effective with the pharmacy class entering in 1994. In 1992, the Physical Therapy program was instituted, and Creighton became the first University in the country to offer the entry level Doctor of Physical Therapy (DPT) degree. In 1995, the School initiated one of the first post-baccalaureate Doctor of Occupational Therapy (OTD) programs in the country.

THE JESUIT ORDER AND CREIGHTON UNIVERSITY

Here in mid-America, Creighton University is Jesuit education. Jesuit American education on the secondary level network is all-embracing. Forty-six Jesuit high schools dot our map, one was established in the 18th Century, twenty-four in the 19th Century, and twenty-one in the 20th Century, touching each year 36,500 young men and women of all denominations.

Twenty-eight Jesuit universities flourish from coast to coast, in 1990 enrolling 182,628 collegiate and professional students. Jokingly likened to sparrows, Jesuits in higher education frequent our nation's largest cities. The educational opportunities they provide are diverse, but all the institutions share in the Jesuit character and tradition. Why? Because they are staffed by religious and lay colleagues who are imbued with, or attracted by, the educational ideals of St. Ignatius Loyola, founder of the Jesuit Order. Ignatius synopsisized his principles for broadly-educated and decent people marked by good judgment in his *Ratio Studiorum*, "Plan of Studies," written about 1540.

And so, there seems to be an instant bond of camaraderie and identification between graduates of diverse American Jesuit universities and high schools before they have visited together for five minutes. Creighton graduates have remarked this again and again. It is a subtle but real bond that these graduates feel. They are part of a great and satisfying network calculated to prepare them for a full and rewarding life. This Jesuit education, in a lesser way, is shared with 1,000 other institutions conducted by the total number of 25,000 Jesuits across the world.

American Jesuit Priests and Brothers are active on every front. They are the largest missionary Order in the Catholic Church. Of their some 6,000 American Jesuits, every fifth man is in the harvest field of some foreign or American mission.

GOALS AND OBJECTIVES

Creighton University exists to educate her students with a view to their intellectual expansion, social adequacy, physical development, aesthetic appreciation, and spiritual enrichment. Creighton serves her publics primarily through teaching and research. Employing the techniques of teaching and research offers numerous other opportunities to provide community services and leadership.

Creighton has behind it a pattern of more than four centuries of Jesuit teaching. The Order's focus has always been on the total person, an approach that includes development of each student's talents to assure that he or she can meet both material and spiritual needs.

Members of every denomination are enrolled in and welcome to all courses in the University. While Creighton fosters learning in a Christian-oriented setting and challenges students to reflect on transcendental truths, students are not required to participate in religious services or activities.

All educational programs of Creighton University are open to both men and women.

CREDO OF CREIGHTON

Creighton, a Jesuit University, is convinced that the hope of humanity is the ability of men and women to seek the truths and values essential to human life. It aims to lead all its members in discovering and embracing the challenging responsibilities of their intelligence, freedom and value as persons.

We therefore profess, and pledge ourselves to teach in the perspectives of, the following creed:

We believe in God, our loving Creator and Father.

We believe in the intrinsic value of the human being as created in God's image and called to be his child. This includes all persons and excludes any form of racism and other discrimination.

We believe that the deepest purpose of each man and woman is to create, enrich, and share life through love and reverence in the human community. This motivates our open and relentless pursuit of truth. For this reason we foster reverence for life in all its human potential.

We believe that we should support all persons in their free and responsible life-sharing through family and social systems, and through political, scientific, and cultural achievements.

We believe that we must strive for a human community of justice, mutual respect and concern. In this context we must cultivate respect and care for our planet and its resources.

We believe that laws exist for the benefit and well-being of individual persons, that legal systems must express the common good, and that all government must be subject to the courageous, though respectful and loyal, criticism of intelligent and responsible citizens.

We believe that the law of justice and love must regulate the personal, family, economic, political, and international life of all persons if civilization is to endure.

We believe in the teachings and example of Jesus Christ.

NONDISCRIMINATION POLICY

Creighton admits qualified students and hires qualified employees without regard to race, color, age, national or ethnic origin, disability, sex, marital status or religion. Its education and employment policies, scholarship and loan programs, and other programs and activities, are administered without unlawful discrimination. The University is taking affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam-era. The University Affirmative Action Director has been delegated the responsibility for coordination of the University's equal rights efforts.

It is also the policy of the University to make all programs and services available to individuals with disabilities. To obtain information on accessibility of buildings and programs or to report problems of accessibility, please contact the Office of the Director of Affirmative Action, Room 232, Administration Building or by telephone (402) 280-3084.

SERVICES FOR STUDENTS WITH DISABILITIES

Services for students with disabilities are provided to qualified students to ensure equal access to educational opportunities, programs and activities in the most integrated setting possible. Students must make timely and appropriate disclosures and requests (at least five weeks in advance of a course, workshop, program, or activity for which accommodation is requested or such other reasonable time as the particular circumstance of a request for accommodation warrants). Requests for reasonable accommodations are encouraged to be made as soon as possible after acceptance. Each student may be required to submit medical or other diagnostic documentation of disability and limitations, and may be required to participate in such additional evaluation of limitations as may appropriately be required by Creighton University or other agencies prior to receiving requested accommodations. The University reserves the right to provide services only to students who complete and provide written results of evaluations and service recommendations to appropriate University personnel. For more information, contact the Dean's Office or the Coordinator of Services for Students with Disabilities at 280-2749.

GRADUATION RATES

In 1995 the completion or graduation rate for students who entered Creighton University in Fall 1989 was 65.8 percent. This includes students who entered

professional school programs of Dentistry, Law, Medicine and Pharmacy and Allied Health Professions at Creighton University.

ACCREDITATION

Creighton University is fully accredited by the North Central Association of Colleges and Schools, the accrediting agency for the region in which the University is situated.

The College of Business Administration is an accredited member of the American Assembly of Collegiate Schools of Business (graduate and undergraduate programs). The accounting program has been accredited (Type A - baccalaureate) by the Accounting Accreditation Committee of the Assembly.

The School of Nursing offers a baccalaureate program and a graduate program in nursing, both accredited by the National League for Nursing, Inc. Additionally, the basic program is approved by the State of Nebraska.

The teacher education programs of Creighton University are fully accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary, secondary, and special education teachers at the undergraduate level, and for the graduate-level preparation of school principals and school counselors.

The Schools of Dentistry, Law, Medicine, and Pharmacy and Allied Health Professions are accredited by their respective professional standardizing agencies: American Dental Association, American Bar Association and Association of American Law Schools, Liaison Committee on Medical Education, American Council on Pharmaceutical Education, and the American Occupational Therapy Association.

CAMPUS FACILITIES

Creighton's 56-building campus provides excellent facilities for most of the University's academic and extracurricular activities. Following two decades of phenomenal expansion and growth, emphasis now is placed on beautification of the central campus, particularly the construction of a pedestrian mall to add green space to the heart of the undergraduate living area. Several phases of the mall project have been completed which provide an appealing, landscaped pedestrian and relaxation area in front of the Administration Building and St. John's Church and across the East Campus to the School of Law.

Main University Campus

The University campus is about a fifteen-minute walk from the business district of Omaha. The principal portion extends from Cass Street on the south to Burt Street on the north, and from Twenty-first Street on the east to Thirtieth Street on the west. (See campus map inside back cover.)

Campus Development

A new student center was constructed on mid-campus in 1987. New artificial-turf athletic fields and extension of the campus mall to the east were done in 1988.

The brand new Lied Education Center for the Arts, a state-of-the-art cultural facility located at 24th and Cass, houses the Fine and Performing Arts Department, which sponsors and produces cultural events in art, music, dance, and theater. Information about all Department productions and events can be obtained through the Department office at 280-2509.

The Carl M. Reinert Alumni Memorial Library, the University's main undergraduate library, has recently undergone a construction project that has doubled the size of the building. The W. Theisen Instructional Technology Center is located on the lower level of the building.

Health Sciences Facilities

The Doctor C. C. and Mabel L. Criss Health Sciences Center is an ultra-modern complex made possible largely through the generosity of the late Mabel L. Criss, whose gift commemorates her late husband, Dr. C. C. Criss. Dr. Criss was a Creighton alumnus; the couple founded Mutual of Omaha and United of Omaha.

Unit I of the Criss Center provides medical laboratory space and facilities for the research activities of the faculty of the School of Medicine. Unit II is the basic sciences building. Unit III is a fully connected companion facility that was completed and occupied in 1976. The latter two units provide the most modern classroom and laboratory facilities for instruction of the freshman and sophomore students in the preclinical medical sciences, as well as office and laboratory space for the members of the preclinical faculty. Twin two-level 255-seat amphitheaters, the connecting link between the two units, form the hub of the academic activities. Multipurpose laboratories, classrooms, and seminar rooms are conveniently distributed throughout the facility. As part of an ongoing process to upgrade and modernize Health Sciences facilities, a complete renovation of Unit I of the Criss Center was completed in February 1994. In addition, the Criss Health Sciences Center accommodates the administration, faculty, and students of the School of Nursing and the School of Pharmacy and Allied Health Professions. The administrative offices of the School of Medicine are located in the Criss Health Sciences Center, as are the offices of the Vice President for Health Sciences.

The recently completed Beirne Research Tower adjoins the Criss Health Sciences Center. This six story medical research facility was made possible by a gift from Doctor Gilbert A. Beirne and his brother, Doctor Clinton G. Beirne. The Beirne Research Tower provides approximately 13,000 square feet of space for laboratories and offices. The modern, functional research laboratories house the regulatory peptide research program, the infectious disease and microbiology program, a bone biology research program, the molecular biology core facility, and an allergic diseases research program.

Saint Joseph Hospital, an ultramodern regional health-care facility with state-of-the-art technology, serves as the major affiliated teaching hospital for the Creighton University School of Medicine. Opened in December of 1977, it is located on Creighton's west campus at 30th and California Streets and was one of the largest privately sponsored construction projects in the history of Nebraska. The hospital is owned and operated by American Medical International, Inc., which acquired ownership in November 1984. Policies for the hospital are set by a local governing board that includes strong representation from Creighton University and the School of Medicine faculty. The 419-bed facility replaced the obsolete, off-campus general hospital that had been supporting the School of Medicine teaching programs.

Constructed as an integral component of the hospital is a new Health Professions Center, which provides office suites for community physicians, as well as offices and examining areas for the clinical faculty of the School of Medicine.

The Boys Town National Research Hospital, constructed and operated by the world famous Father Flanagan's Boys Home, is physically connected to the new teaching hospital. A unique national resource, the Hospital has assembled a highly specialized staff to develop in-patient and out-patient programs for children with communication disorders resulting from physical or sensory defects. The St. Joseph Service League Center for Abused Handicapped Children, established at the Hospital, is designed to assist in the detection, assessment, treatment, and prevention of abuse and neglect of children whose handicaps impair their communicative abilities. The Ronald McDonald House of Omaha, located at the Boys Town Hospital, is a home-away-from-home for the families of children using medical facilities in the Omaha area. The staff of the Hospital also comprises the faculty and staff of the Department of Otolaryngology of the School of Medicine, and the Director of the Hospital occupies the Father Flanagan Chair of Otolaryngology.

Since 1973, the School of Dentistry has occupied a facility containing 150,000 square feet of space (excluding interstitial mechanical areas). It is a three-level structure with grade entry to the first two. Beginning in the 1993 Fall Semester, this building is shared with the School of Pharmacy & Allied Health's Physical Therapy and Occupational Therapy programs. The first level contains administrative offices for both Physical Therapy and Occupational Therapy, student services, classrooms, and Physical Therapy and Occupational Therapy clinical and research laboratories. Adult dental clinical facilities and Dental administrative offices occupy the second level of the building. The third level is occupied by the children's dental clinic, classrooms, basic science laboratories, research space, faculty offices, seminar rooms, and animal research.

Central to the facilities of the Health Center is the Creighton University Bio-Information Center. This facility brings to the health sciences campus a focal point for the most modern and innovative learning and research services for the students and faculty of the University, the hospital staff, and the health sciences community of the Omaha area. It includes a conventional health sciences library with a capacity of 90,000 volumes, as well as a Learning Resource Center and Biomedical Communications Center.

University Libraries

The libraries of the University and the volumes and microforms they contain are shown below. The totals are exclusive of pamphlets, reports, and similar publications. The Reinert/Alumni Library is the University's main library.

Alumni Library	393,031 Volumes	749,310 Microforms
Law	133,955 Volumes	480,287 Microforms
Health Sciences	<u>117,648 Volumes</u>	<u>86,149 Microforms</u>
	644,634 Volumes	1,315,746 Microforms

LIVING ACCOMMODATIONS

The University operates six residence halls. Four are traditional style with common bathroom facilities. Most rooms are double occupancy. One hall, Kenefick, is a residence for junior and senior level students and is an efficiency or one bedroom apartment style hall. Another hall, Towers, is a hall of efficiency, one-bedroom, and two-bedroom apartments open to married students, students with families, or students who have already completed bachelor's degrees. Limited space is available to students with families. To reside in Towers, students must sign a 12 month lease. All other halls are contracted for the full academic year beginning in August and continuing until the end of exams the following May.

The residence hall contract is for both room and board. Only students living in Kenefick or in Towers are not required to be on the board plan. A student requesting to be off the board plan for medical or other reasons must furnish documentation to the Assistant Vice-President for Student Services for his review. Generally, the dining services is able to meet most dietary needs. Students may elect either a 19, 15 or 12 meal plan per week. Students in Kenefick or in Towers may elect any of the standard meal plans or the Flex Plan. The Flex Plan allows the student to eat any 60 meals during a semester. Board plans are also available to off campus and commuting students.

Meals are served in the Becker and Brandeis dining areas located adjacent to the campus residence halls. Carefully planned menus assure a well-balanced variety of nutritious and appetizing foods. More information about dining opportunities is available from Sodexo food service located on the lower level of Brandeis Hall.

The room and board rates per semester in University residence halls effective August 1996, based on double occupancy (except Towers Lease Plan) are:

Board Plans per Semester:

Plan A: 19 meals per week + 4 Bonus dollars	\$1057.00
Plan B: 15 meals per week + 100 Bonus dollars	\$1057.00
Plan C: 12 meals per week	\$996.00
Flex Plan: 60 Meals per semester and 200 Bonus dollars	\$450.00

Room Rate (Rates are shown per semester except for Towers)

Degelman, Gallagher, Kiewit and Swanson Hall

Campus--Double Room	\$1,306.00
Campus--Private Room (when available)	\$1,960.00

Kenefick

Efficiency Apartment	\$1,405.00
One Bedroom Apartment	\$1,460.00
Private Efficiency (when available)	\$2,100.00

Towers

Towers--Efficiency Lease	\$430.00 per month
Towers--Small One Bedroom Lease	\$475.00 per month
Towers--Large One Bedroom Lease	\$495.00 per month
Towers--Two Bedroom Lease	\$565.00 per month

Incoming students must apply to the Department of Residence Life for a residence hall reservation. All students pay a damage deposit of \$100. Students applying for The Towers are required to pay a deposit equal to one month's rent for the Towers lease plan. Each semester's tuition, fees, and room and board charges are payable at the time of registration. However, arrangements may be made to pay monthly installments by using the University's Monthly Electronic Transfer (MET) plan (see page 37).

Room and board rates are subject to change without notice. Any unusual circumstances as to age or physical condition requiring special housing arrangements will be given full consideration by the Assistant Vice President for Student Services. Questions regarding housing services and facilities may be directed to the Department of Residence Life, 104 Swanson Hall; telephone (402) 280-3016.

FAMILY HOUSING

Creighton University has limited space in the apartment-style Towers residence hall for families. A twelve-month lease is required on all apartments except for those graduating at the end of the current lease. Available for families are the large one-bedroom apartments (655 sq. ft.) There are only four two-bedroom apartments in the Towers. Family housing is available on a first-come, first-served basis.

OFF CAMPUS HOUSING

The Department of Residence Life, 104 Swanson Hall, posts information on rentals in the area of campus. The actual arrangements for housing are left to the individual students. The University is not responsible for the rental agreements between students and their landlords. It is suggested that students set aside several days before registering to search, inspect, and contract for suitable housing.

Child Care Center

Students with children may wish to take advantage of the Creighton Child Care Center, which is conveniently located just east of the main campus area. The Center has reasonable rates, and can accommodate children ranging in age from six weeks through five years. The Center also offers summer care for school-aged children. Call (402) 280-2460 for information.

STUDENT HEALTH SERVICE

The Student Health Service is committed to promoting the physical and mental health of the Creighton student through provision of quality health care services. Public health measures to prevent infectious disease are implemented. Student Health Service also provides programming in health promotion and disease prevention to the University community. All of these services are based on research and evaluation of college students' health needs and lifestyle issues. Appropriate use of the health care delivery system is necessary to keep health care accessible. Therefore, our goal is to prepare students to be their own health advocates and informed consumers of health care services.

The Student Health Service provides health care to all students attending the University. A complete statement of the extent and limits of health service benefits is contained in the Student Handbook.

Student Health Service hours are 9:00 a.m. to 5:30 p.m., Monday through Friday, throughout the year. Students are encouraged to make an appointment because students with appointments will be seen before students who walk in. Full time students are not responsible for the charge for an office visit if not paid by the student's health insurance. However, charges for x-rays, laboratory work, or special procedures are the responsibility of the student if not paid by health insurance. Prescriptions can be filled at the St. Joseph Hospital Outpatient Pharmacy at a discounted cost on a cash and carry basis only. If it is necessary to refer a student for consultation to a physician or surgeon outside of Student Health Service, the cost is the responsibility of the student or the student's health insurance.

Student Health Service is located in the Kellom Valley Shops, 2530 Cuming Street. Telephone: (402) 280-2735; Worldwide Web: <http://www.creighton.edu/StudentHealth>; FAX: (402) 280-1859; e-mail: student-health@creighton.edu

Immunizations

Students are required to submit to the Student Health Service a confidential health record on the form sent to prospective students. Included on this form is an immunization record that **must** be completed. Registration will be delayed if documentation for immunity to measles, mumps, and rubella is not received prior to registration. The documentation must comply with the following standards which based upon recommendations of the Centers for Disease Control. **Measles:** All Creighton University students, full and part time, born after 1956, are required to provide documentation of receipt of two doses of measles vaccine. The first must be after the first birthday and after December 31, 1967. The

second must be after 1979. **Mumps:** Immunization must be after 12 months of age. **Rubella:** Immunization must be given after 12 months of age and after December 31, 1967. Other forms of documentation of immunity include (1) physician-diagnosed illness with certified data including month and year (except for rubella); (2) you were born before 1957, and presumed to have had the disease; or (3) reports of an immune titer proving immunity.

HEALTH INSURANCE

Health insurance that covers both inpatient and outpatient medical services is required. Students who do not provide proof of other health insurance will be assessed on the tuition statement for the Student Health Insurance Plan. A completed waiver form and a copy of your health insurance card must be submitted as proof prior to or at the time of registration in order to comply with this policy. This proof must be submitted only once unless there is a change in your health insurance coverage.

A complete announcement of the Student Health Insurance Plan will be sent to each student and prospective student during the summer. Or you can obtain further information by contacting Student Health at (402) 280-2735.

COUNSELING AND PSYCHOLOGICAL SERVICES

These professional services are designed to help students actualize themselves in the areas of effective learning, appropriate educational and vocational decision-making, and social and personal adjustment. In conjunction with counseling interviews, a complete selection of psychological tests and inventories are available to students so that they may explore values, interests, aptitudes, and abilities.

The staff are professionally trained psychologists and counselors who assist students with a wide range of developmental concerns. Students expressing concerns in areas such as studying, interpersonal relationships, communication, decision-making, choices of majors or occupations, values clarification, and tension may benefit from talking with a staff member.

The staff members strive to be warm, understanding and accepting—not making decisions for the student but assisting him or her in self-direction. All aspects of the services are confidential. No information is released to anyone without the written consent of the student.

These services are available free of charge to full-time enrolled students. Office hours are 8:00 a.m. - 4:30 p.m., Monday through Friday, 280-2733.

Counseling and Psychological Services is located on the upper level of Brandeis Hall. Services are available free to full-time students. Phone 280-2733 for an appointment.

EXTRACURRICULAR ACTIVITIES

It is the goal of Creighton University to develop an individual who not only has mastered the content of his or her academic courses, but who also has broad interests and who has developed skills in interpersonal relations. To aid in this process, the University promotes a wide range of student organizations and activities. Students are encouraged to take an active interest in the various academic, social, dramatic, literary, debating, student government and religious activities. The Student Activities Office in the Student Center can provide information.

THE ALUMNI ASSOCIATION

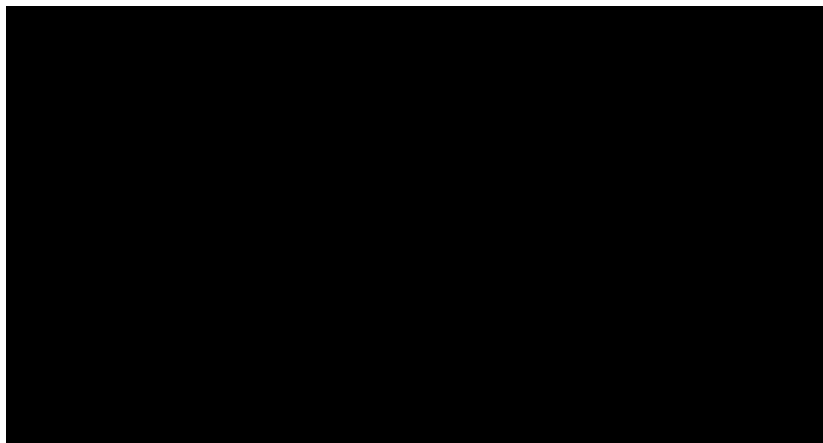
The Creighton University Alumni Association was formed in 1892 to provide an organization through which graduates and former students could continue the friendships and associations developed during their student days.

Its mission is “to advance the interests of the Creighton family through a commitment to academic excellence, Judeo/Christian ethics, and a lifelong relationship between Creighton alumni and University that enriches both.”

The administration of alumni activities is handled by the Alumni Relations Office under supervision of the Director of Alumni Relations. All activities are carried out under policies established by the National Alumni Board, the governing board of the Association, and executives of the University.

Among the activities sponsored by the Alumni Association are the annual President’s Alumni Picnic, the Thanksgiving Day Mass and Breakfast and the annual dinners and class reunions for the various Schools and Colleges. Each of the 72 Creighton clubs in as many cities across the country hold social meetings at least once a year. University officials attend all of these annual get-togethers to which alumni, parents of students, and friends of Creighton University are invited.

The Creighton Alumni Association has grown over the years to include nearly 50,000 alumni, parents, and friends.



THE GRADUATE SCHOOL

The Graduate School was formally established as a separate division of Creighton University in 1926, although the first Master's degree was conferred by the University in 1893.

PURPOSE

The Graduate School is charged with promoting graduate studies and research of high quality within the various graduate programs, and with fostering scholarship and research among the faculty.

Graduate study differs from undergraduate study in that, while extending the student's range of knowledge through course work and independent study, it intends to develop traits of critical judgment, independent thinking scholarly initiative, and the habit of disciplined inquiry. Each graduate student is expected to thoroughly develop knowledge and skills in at least one field of endeavor so that the student can communicate the major concepts of that area of expertise to specialists and laypersons. The student should not expect to acquire the advanced knowledge and technical skills for interpretation and development of one's field of study from formal classroom and laboratory sessions alone, but should, in addition, utilize his or her energies to collect, organize, synthesize, and communicate the knowledge and application of the independent resources of one's chosen discipline. Mature graduate study, then, aids the student in acquiring the skills requisite to identifying problems of inquiry, formulating means to the solution of those problems, and communicating the interpretations of scholarly analysis.

ORGANIZATION OF THE GRADUATE SCHOOL

The Graduate School of Creighton University is conducted under the administration of the Dean and Board of Graduate Studies. The board is composed of the Dean (chair), six representatives elected by the graduate faculty, and six appointed by the Dean, and two student representatives.

Each program recommends on admission of students to advanced study and research after weighing the background, interest and promise of the prospective student, and evaluating the availability of human and physical resources for meeting the student's objectives and the program's goals.

THE GRADUATE FACULTY

The faculty of the Graduate School are appointed by the Dean from the faculty of those divisions of the University that offer graduate programs: Creighton College of Arts and Sciences (humanities and letters, education, mathematics and computer science), College of Business Administration, the School of Medicine (biomedical sciences, medical microbiology, pharmacology), and the School of Nursing.

The graduate faculty serve as program directors and graduate student advisers. Questions relating to specific aspects of graduate study can be directed to the particular program's director of graduate studies or to the student's graduate adviser. Questions relating to specific aspects of admission, however, should be directed to the Office of the Dean of the Graduate School.

The duties of the graduate faculty include the following:

1. Reviewing, sponsoring, and making recommendations regarding the admission of new students to degree programs and forwarding them to the Dean of the Graduate School for approval;
2. Advising graduate students and formulating curricular plans of study;
3. Reviewing and approving individual degree programs (plans of study) and forwarding them to the Dean of the Graduate School for approval;
4. Assisting the Dean of the Graduate School in implementation of regulations and policies covering graduate students, graduate study, and graduate courses.

NATURE OF GRADUATE STUDY

A graduate course provides for advanced study in a field of knowledge beyond the upper-division level. It demands a higher level of independent critical analysis and a higher degree of specialization than is usually required in an undergraduate course. A graduate course may be conducted in several ways:

1. As a course designed to organize the results of original research or to expand an advanced field of knowledge;
2. As a seminar in which the instructor and a small group of graduate students present the results of their special study and original research for group criticism, evaluation, and discussion;
3. As an individual project or as individual research conducted under the supervision of a senior scholar.

The graduate curriculum is designed to provide the student advanced study in a selected discipline or in an interdisciplinary program. All courses listed in an advanced degree program must be graduate or advanced upper-division courses approved by the student's graduate committee and graduate adviser.

STUDENT'S PLAN OF STUDY

Upon matriculation the student is required to identify his/her specific objectives and a sponsor (adviser) who will aid the student in constructing a *Plan of Study*, which should be formulated during the first semester (nine to twelve semester credit hours) in residence for a Master's degree or within the first year (30 semester hours) for the Doctor's degree. The formal acceptance of a plan of study will then establish the courses, experiences, and research endeavors expected in meeting the degree requirements of the program. Prerequisite deficiencies should be included in the *Plan of Study*, although they may not contribute to the minimum credit requirements for the degree. The curriculum will ordinarily culminate with a general comprehensive examination and/or defense of thesis or dissertation.

Ordinarily a plan of study will include from 30 to 36 semester hours of graduate course work (including supervised research and research tools) for a Master's degree and 90 semester hours of course work, independent study, and research for a Doctor's degree. In addition, all doctoral programs and Plan A Master's programs require a dissertation or thesis that represents a significant contribution to the literature of the field. No graduate degree is awarded on the basis of course work alone, but is awarded

on the basis of demonstrated proficiency in the field. Specific requirements and opportunities for studies are detailed under the program descriptions.

ADMISSION

It is the admission policy of Creighton University to accept qualified students within the limits of its resources and facilities. See also the University's *Nondiscrimination Policy* on page 18.

This publication contains the most current information available on the subjects covered as of the date of publication. However, this publication is not an offer to enter into a contract. Final selection of applicants to be admitted shall be made by the University, which reserves the right to deny admission to any applicant for any lawful reason. The University also reserves the right to modify or eliminate University rules and policies, including without limitation: admission requirements and criteria; course offerings, or location or frequency thereof; course content; grading requirements and procedures; degree requirements; tuition, fee and board and room rates; financial assistance programs; substantive or procedural student disciplinary rules; and support services, and to apply any such modifications to any student without regard to date of admission application or enrollment.

GENERAL REQUIREMENTS

A student desiring admission to graduate courses must possess a Bachelor's degree or its equivalent from an accredited college or university. Entrance into an advanced study program or access to graduate courses requires preparation equivalent to Creighton's undergraduate major preparation for the proposed program of graduate study.

Applicants for admission who hold an undergraduate degree or its equivalent but are unable to meet all of the requirements for graduate work in a specific field or fields are admitted only on a conditional basis. Such applicants may be required to take further undergraduate work of a substantial nature at Creighton University or at another approved institution.

Ordained priests and ministers who have completed a four-year course of study in a recognized seminary may apply for admission to the Graduate School. They must, however, submit a transcript of courses taken in the seminary and fulfill whatever prerequisites the program director finds lacking before they are allowed to become applicants for degrees.

Students lacking a Bachelor's degree who have successfully completed at least three years of undergraduate preparation in college and the first two years in an accredited school of medicine or dentistry may apply for admission to a Master's program in biomedical sciences (biochemistry, bioorganic chemistry, cell and developmental biology, molecular biology, neurobiology, physiology), microbiology or pharmacology. In all cases, the applicant's previous record is expected to show an adequate foundation for graduate study in terms of both subject matter and quality of work.

APPLICATION PROCEDURE

In the event the applicant is seeking admission to the MBA or MSITM Graduate Program, he or she must contact the Graduate Business Program Coordinator in the College of Business Administration and obtain the appropriate application form. For all other programs, the Dean of the Graduate School must be contacted to obtain a

formal application. Anyone seeking admission to a graduate program must have the following credentials submitted accordingly either to the Dean of the Graduate School or the Graduate Business Program Coordinator:

1. A completed formal application for admission together with a \$30 (nonrefundable) application fee.
2. An official transcript of all college work attempted sent direct from each institution attended. Photocopies from students are not acceptable.
3. Graduate Record Examination (GRE) scores or Graduate Management Admission Test (GMAT) scores.
4. Three letters of recommendation/evaluation by persons familiar with the student's academic background, potential, and achievements and personal qualities are required for students seeking admission to all programs.
5. All foreign applicants are required to take the Test of English as a Foreign Language (TOEFL) and have the scores sent to Creighton unless they can demonstrate proficiency in English in some other way.

Deadlines for completing one's application and credentials file are July 15 for the Fall Semester, December 15 for the Spring Semester, and May 15 for the Summer Session.

The applicant for admission must assume the responsibility of requesting the registrar of each institution previously attended to mail an official transcript of record direct to the Dean of the Graduate School or the Graduate Business Program Coordinator. A transcript must be received from each institution attended, including any attended during summer sessions, regardless of whether or not the transcript of the last institution attended lists the record at other institutions and regardless of whether or not credit was received. All documents, including credentials and other materials, become the property of Creighton University and are not returnable.

Those who wish to pursue graduate study but are not candidates for a degree from Creighton may be admitted to the Graduate School as special students. A special student application is required, plus a \$10.00 application fee and the students must obtain consent of the Department Chair prior to registering for any course. The number of hours earned as a special student that can be applied toward a graduate degree at the University will vary from program to program, but may not be more than nine (9) hours.

ADMISSION TESTS

GRE or GMAT scores are required for unconditional admission to all Creighton graduate programs. Applicants for the program leading to the degrees of *Master of Business Administration* (M.B.A.) and *Master of Science in Information Technology Management* (M.S.I.T.M.) must have submitted scores on the Graduate Management Test (GMAT). The GRE requirement may be waived for students who hold a previous masters degree. Waiver of this requirement is contingent on an assessment of all elements of a student's record by the department or program to which the student seeks admission.

GRE and GMAT tests are administered several times a year at test centers, usually on college campuses, throughout the United States, Canada, and other countries. Arrangements for taking a test must be made at least four weeks prior to the scheduled administration. For further information, contact either the Dean of the Graduate School, Creighton University, or the Educational Testing Service, Princeton, N.J.

Graduate Record Examination (GRE)

The GRE Aptitude Test is required of all applicants except those entering the M.B.A. and M.S.I.T.M. programs. The GRE Aptitude Test measures the general verbal and mathematical (quantitative) abilities of college seniors or graduates who plan to undertake graduate studies. The GRE Advanced Tests are designed to measure comprehension and knowledge of subject matter basic to graduate study in specific fields. Furthermore, students who may have weak undergraduate credentials are well advised to strengthen their cases for admission by presenting both the GRE Aptitude Test scores and scores on the GRE Advanced Test available in the subject of their proposed graduate study.

Graduate Management Admission Test (GMAT)

GMAT scores are required for all applicants in the M.B.A. and M.S.I.T.M. programs. The Graduate Management Admission Test (GMAT) is an aptitude test designed to measure certain mental capabilities important in the study of management at the graduate level. It contains questions that test one's ability to read, understand, and reason logically with both verbal and quantitative material. The test is not a measure of achievement or knowledge in any specific subject, and one is neither required nor expected to have had undergraduate preparation in business subjects.

EVALUATION AND SELECTION

The Office of the Dean of the Graduate School compiles the applicant's file (application form, transcripts, GRE scores, letters of evaluation) for all programs with the exception of the Graduate Business Programs. The completed file is forwarded to the appropriate program director for computation of grade-point averages (GPA) for major and support areas, review and recommendation. Recommendations for admission include evaluation by a sponsor (the prospective student's potential faculty adviser) if other than the program director. Students will be notified by the Dean of the Graduate School regarding final action and disposition of the application.

The Graduate Business Program Coordinator compiles the applicant's file for the MBA and MSITM programs.

In addition to the special requirements that may be made by the departments of instruction, the equivalent of a Creighton University undergraduate major is generally required as prerequisite for a graduate major. The qualitative character of the student's undergraduate work is no less important than the quantitative in establishing an applicant's eligibility. The applicant's record of undergraduate studies must generally indicate achievement above average. This superiority must be particularly evident in the field of projected major study.

ADMISSION OF INTERNATIONAL GRADUATE STUDENTS

This school is authorized under Federal law to enroll nonimmigrant alien students.

Candidates for admission from foreign countries must present original and complete educational credentials. Ability to speak and write correct grammatical English is imperative. All foreign applicants are required to take the Test of English as a Foreign Language (TOEFL) and have the scores sent to Creighton unless they can demonstrate proficiency in English in some other way. Acceptance into the University may be granted if the candidate's credentials indicate satisfactory preparation for admission and if the candidate's TOEFL score is 550 at the graduate level. Foreign students may enroll in Creighton University's English Language Program on a full- or part-time basis in order to improve their English skills.

Once the international candidate has been accepted into the University as a full-time student, an affidavit of support for the cost of at least one semester is required before a certificate of eligibility (Form I-20) will be issued to the student.

Creighton University requires all registered students who are not permanent U.S. residents or U.S. citizens to carry the health and accident insurance plan offered on a group basis to Creighton students. The annual premium for 1996-97 will be approximately \$800 for a single student. The insurance covers expenses arising from both accident and sickness, whether sustained at the University or elsewhere, during the entire policy term. The policy has few limitations, but these should be noted carefully. Creighton has set this requirement in line with the majority of other universities in the United States to relieve parents or students of the financial strain that normally accompanies unanticipated medical expenses. Illness or accidents requiring medical services and hospitalization can cost many thousands of dollars.

If a student is sponsored by any agency that provides its students with health and accident insurance, Creighton insurance may not be required. Evidence of this coverage must be submitted to the Dean of the Graduate School or Graduate Business Program Coordinator in order to qualify for a Creighton insurance waiver.

CLASSIFICATION OF STUDENTS

Applicants for Degrees

Applicants who meet all of the undergraduate prerequisites and other requirements for graduate work in a specific field or field of study are admitted without condition to the Graduate School by action of the Graduate School Dean upon the advice of the program director. Such applicants are classified as degree students upon enrollment.

Nondegree Students

Nondegree (special) students are understood to have at the time of registration no intention of applying for a graduate degree in the Creighton University. The credits they receive may be certified to school boards and other institutions but will not be accepted for advanced standing should they later decide to become applicants for a Creighton graduate degree except by special action of the Board of Graduate Studies. Nine semester hours is the maximum advanced-standing credit allowed in this event.

Auditing Courses

Students will be permitted to register as auditors only for exceptional reasons and with the explicit authorization of the Dean. Not all courses are open to auditors. Auditors are not held responsible for the work expected of regular students, are not admitted to examinations, and receive no grade or credit for the course. Regular attendance at class is expected, however, and auditors are subject the same as regular

students to being dropped from the course for excessive absences (in this event auditors receive a W). Changes of registration from credit to audit or audit to credit will not be permitted after the deadline, four weeks after the first day of classes.

A student who has previously enrolled as an auditor may not take the course for credit during any succeeding semester except by special permission of the Dean.

Charges for courses audited are one-half (50%) of the regular per-credit-hour tuition rate when the per-credit-hour rate is applicable. For Summer Session courses, the 50% reduction for auditors applies to the regular rate only, not to the Summer Session discounted rate. Also, special courses, workshops, and institutes offered at a special flat-rate tuition charge are excluded from the auditor discount.

Students seeking to change from credit to audit status will be eligible for a tuition adjustment (if otherwise applicable) only if the change is made with the dean's approval within the period for late registration.

UNDERGRADUATE STUDENTS IN GRADUATE COURSES

Undergraduate students in the second semester of their Senior year are permitted to take courses for graduate credit, provided that they have fulfilled all requirements for graduate work in a specific field or fields. They remain students in the undergraduate college, but must register for graduate courses through the Dean of the Graduate School. Such work, however, will not be accepted as a part of a graduate program unless approved by the Graduate Board and the Dean.

REGISTRATION

Students must register for each term (semester, summer session, etc.) in which they expect to engage in study. Registration is to be completed within the period specified for a given term. Students who fail to register by the date designated will be required to pay a late registration fee of \$46. No graduate credit applicable to a degree will be allowed unless a student has formally registered for graduate work at the time of registration for that course.

Each student is expected to accomplish his or her own registration. When special circumstances exist, registration by proxy may be allowed. This must be cleared in advance with the Office of the Graduate Dean.

As the first step in the registration process, the student prepares a course request form which must be approved by the student's adviser and/or Dean. This authorizes the student to register for the courses listed thereon.

To facilitate the registration process, continuing students are encouraged to participate in Early Registration as specified for the coming term. Each student completing Early Registration will receive a copy of his/her specific course/class schedule for the next semester. Students who did not register early will register on campus during the period for Final Registration that immediately precedes the opening of the term.

Graduate students are offered a mail registration option.

Graduate students, under the guidance of the program director, should plan their work so carefully that no changes in the student's Plan of Study (See page 28) should be necessary. When changes seem advisable, they may be made with the approval of the Dean of the Graduate School.

ADJUSTMENTS AND WITHDRAWALS

AFTER REGISTRATION

Changes in Registration

Any change after the student's initial registration is permitted only with the written consent of the Dean. Changing from one section to another of the same course does not require the Dean's permission but involves one add. In the event a change in registration is initiated by the University authorities, no fee is charged.

Dropping Courses

Withdrawal from any course requires sufficient cause and may be made only with the approval of the Dean. After the first week of class (the period for late registration) any petition to drop a course or to change status from credit to audit must include the recommendation of the teacher(s) involved and the student's major adviser before the petition will be acted on by the Dean. Course withdrawals with a W may not be made later than the date posted each semester, which is approximately a week after midsemester grades are available. A student who drops a course without approval of the Dean receives WF for the course (failure because of unauthorized withdrawal).

Withdrawal from the University

A student is considered in attendance until he or she has formally notified the University in person or writing of his or her withdrawal.

Permission to withdraw from the University is granted by the Dean of the School or College in which the student is registered. This is required as a condition of honorable dismissal. After properly filling out the withdrawal card and securing all of the necessary clearances, the student will present the withdrawal card at the Business Office where it will be countersigned and transferred to the Registrar.

The policy of considering a student as withdrawn from the University, after two consecutive weeks of unexplained absence in no way is to be interpreted as allowing withdrawal without formally notifying the Dean in person or in writing of the withdrawal.

A student withdrawing from the University during any semester or summer session before the final examinations forfeits credit for work done in that term. Students who withdraw with permission of the Dean receive W on their official record; those who withdraw without permission of the Dean receive WF for all courses (failure because of unauthorized withdrawal).

TUITION AND FEES

Ordinarily tuition and fees and board and room charges are payable in advance for an entire semester or summer session¹ (see Financial Arrangements). All rates are subject to change without notice.

<i>Application fee</i> for admission as a regular student	\$30.00
<i>Tuition per semester-hour credit (rates effective August 1994):</i>	
a. For courses numbered below 600	366.00
b. For courses numbered 600 and above	366.00
<i>University Fee</i> per semester for graduate students	
registering for eight or more semester hours	168.00
<i>Student Health Insurance Premium</i> for six months for graduate students	
registering for eight or more semester hours ²	442.00

<i>Laboratory fee</i> — for each lab course offered by medical departments	50.00
<i>Laboratory fee</i> — biology for each lab course	28.00
<i>Laboratory fee</i> — chemistry for each lab course:	
a. Courses numbered below 200	28.00
b. Courses numbered 200 and above	35.00
<i>Laboratory fee</i> physics for each lab course	28.00
<i>Graduate Record Examination fee</i> for general or subject area test	48.00
<i>Graduate Record Examination fee</i> (Computerized Version)	93.00
<i>Graduate Management Admission Test fee</i>	52.00
<i>Late registration fee</i> (not applicable in summer session)	46.00
<i>Late payment fee</i>	(See Late Payment Policy-page 37)
<i>Special examination/evaluation fee</i> each such examination or other learning assessment	15.00
<i>Recording fee</i> for each credit hour awarded on basis of examination or other special learning assessment	10.00
<i>Thesis binding fee</i> (graduate) per copy	10.00
<i>Transcript fee</i> ³ for the first transcript	5.00
(Plus \$1.00 for each additional transcript in the same order)	
<i>Board and room rate</i> per semester	(see pages 20-21)

The tuition charges for courses audited are one-half (50%) of the regular per-credit-hour rate when the per-credit-hour rate is applicable.

Loss or damage to University property and equipment and excessive use of laboratory materials are charged to the student or students responsible.

Property and equipment, including library books, military uniforms, laboratory apparatus, etc., loaned to a student for use during a period of instruction must be returned by the time specified. In case of delinquency, grade reports, transcripts, and diplomas shall not be released until proper return or restitution is made.

FINANCIAL ARRANGEMENTS

Tuition and fees, and board and room charges are payable at the time of registration for a semester. However, arrangements may be made to pay monthly installments by using the University's Monthly Electronic Transfer (MET) plan. Participants in this plan will be limited to the unpaid balance after all financial aid credits have been applied. Folders describing the payment plans and services of MET are mailed to prospective and returning students during the summer.

Books and supplies may be purchased at the Campus Book Store. These items must be paid for when they are obtained.

Students are invited to pay tuition and other expenses by personal check or money order. This is recommended especially to avoid the risk involved in carrying large amounts of cash. All students, particularly those from out of town, are urged to establish checking accounts in Omaha or hometown banks. The University will ordinarily cash small checks for students. (There is a \$200 limit for each student per day in the Business Office.) However, the University reserves the right to revoke or to deny this privilege to any individual at any time.

Late Payment Policy

A late payment fee will be added to charges assessed at registration that remain unpaid after the period for late registration. This fee is \$69 for the first month and an additional \$35 for each subsequent month that the account remains unpaid. Accounts

with unpaid balances under \$500 will be subject to a \$69 fee the first month and \$25 each month thereafter.

Students with questions regarding their financial responsibilities are invited to contact the Business Office to set up an appointment for individual counseling.

Special Tuition Rates for Teachers and School Administrators and Students enrolled in the Christian Spirituality Program

Teachers and school administrators who are employed full time in public or private elementary or secondary schools and persons who work on a consistent full-time or part-time basis in specific church ministries may take one course each semester (fall and spring) at Creighton at a tuition discount of 50 percent of the regular per-credit-hour rate. Students must complete an Application for Teacher Improvement Remission verifying employment status. These forms are available in the Graduate School Office. Telephone: (402) 280-2870.

The University also reserves the right to exclude certain programs from this special discount. The following programs are currently excluded: Master of Business Administration and Master of Science in Information Technology Management. In the future, other programs may be added or deleted without notice.

Students enrolled in the Christian Spirituality Program (CSP) also qualify for the tuition discount rate based on the Summer Sessions tuition rate. After degree seeking students have completed 12 semester hours in CSP courses, they may apply for grants from the Christian Spirituality Program's own limited financial aid funds.

WITHDRAWALS AND REFUNDS

Students withdrawing before the end of a semester will be charged tuition and recurring fees on the following basis:

<i>Period of attendance from date of enrollment</i>	<i>Percent of the semester rate to be charged</i>
During the first week	10%
During the second week	20%
During the third week	40%
During the fourth week	60%
During the fifth week	80%
Over five weeks	100%

Students withdrawing before the end of a summer session¹ the following basis:

<i>Period of attendance from date of enrollment²</i>	<i>Percent of the semester rate to be charged</i>
One or two class days	10%
Three through seven class days	40%
Eight through twelve class days	80%
Over twelve class days	100%

Students withdrawing before the end of the Pre-Session will be charged tuition and recurring fees on the following basis:

¹ Registration is not complete until financial arrangements have been made.
² This charge may be waived if the student presents evidence that he or she carries insurance that provides coverage at least comparable to the student insurance offered by the University.
³ Transcripts, grade reports and diplomas are released only when all outstanding balances have been paid.

<i>Period of attendance from date of enrollment</i> ²	<i>Percent of the semester rate to be charged</i>
One or two class days	10%
Three through five class days	40%
Six or seven class days	80%
Eight or more class days	100%

Refunds of room rent for withdrawals will be on the same basis as refunds of tuition.

Nonrecurring fees, the application fee, the University fee, and penalty fees will be charged in full, regardless of the period of attendance.³

Students assessed tuition per credit hour, including part-time students, graduate students and students in a summer session, will be charged for courses dropped in accordance with the foregoing schedule applicable in the event of total withdrawal.

A student will be considered as having withdrawn from the University after two consecutive weeks of unexplained absence. However, this policy is not to be considered as revoking the regulation which requires a student to notify the Dean in person or in writing of his withdrawal. Refunds are made to the student on the basis of the date he has formally notified the Dean in person or in writing of his withdrawal.

STUDENT FINANCIAL AID

To be considered for financial aid, a student must be accepted for admission as a degree-seeking student.

GRADUATE FELLOWSHIPS

Creighton University offers a number of Graduate Assistantships and Fellowships to graduate students who wish to qualify for advanced degrees. The stipends for assistantships and fellowships vary with their nature, the qualifications of the applicants, and the type of service associated with the individual appointments.

In all instances, the appointee must have a Bachelor's degree or its equivalent from a recognized college or university. The previous study and training must be acceptable to the department in which the applicant desires to pursue studies. All appointments are made for one year (academic or calendar year as noted below) by the Dean of the Graduate School in conjunction with the departmental chair. Satisfactory study and cooperation are requisite to reappointment for a second year. Appointments may be terminated by the Dean of the Graduate School whenever she shall deem this necessary for the good of the University or when the appointee is academically disqualified.

Fellowships

Students appointed to Fellowships are required to provide twenty (20) hours of service per week as assigned by their Department Chair. They are expected to devote full time to their studies. Fellows are ordinarily not permitted to exceed a program of ten (10) semester hours of course work in any semester. They must take a program of at least eight (8) semester hours.

Graduate Fellowships include a stipend plus the remission of tuition and laboratory fees. All general university fees, however, must be paid by Fellows.

The College of Business Administration also has Graduate Research Assistantships available for selected majors in graduate Business Administration programs. The assistantships, although limited in number, provide full tuition and a stipend in exchange for a commitment of 20 hours of service per week during the academic

year. The assistant generally is assigned to a faculty member or an academic department for faculty research or assistance in administering the Wade Computer Center in the College of Business Administration.

GRADUATE SCHOLARSHIPS

Graduate Scholarships are reserved for specially qualified or needy students who have completed their undergraduate work with distinction and show promise of successfully engaging in graduate research. These scholarships are intended to facilitate graduate study.

LOAN FUNDS

Eligibility for any Federal aid program requires that at least half-time enrollment (four hours) per term be maintained. Receiving a Graduate School fellowship, scholarship or remission may affect Federal aid eligibility.

Stafford Student Loan (Subsidized)

If this aid type appears on your Award Notification, the Student Financial Aid Office has either: (1) indicated your eligibility to borrow with a message on your award letter stating the maximum you may borrow or (2) processed your Stafford for the amount listed on the award letter.

What are the terms of this loan? A student may borrow from any lender offering the Stafford loan program and a state or other private nonprofit agency will stand behind the loan. All students must demonstrate financial need to be eligible for this loan, and the amount you may borrow depends on your financial need but may not exceed the yearly limit of \$8,500 per year. Professional students may borrow up to an aggregate maximum amount of \$65,500 (including undergraduate borrowing). An origination and guarantee fee, paid by the student, will be deducted from the loan before it is disbursed. The Federal government pays interest on the loan while you are in school. Repayment and interest begin six months after you graduate, leave school, or drop below half-time enrollment. For loans received on or after 7-1-94, a one-year variable interest rate, not to exceed 8.25 percent, is in effect. Some deferments are allowed which are listed on your promissory note.

How will I receive the money? If you are eligible for the Stafford Loan, a pre-printed loan application will be included with the award notification along with an information sheet which describes the application process. After processing, your check will be forwarded to Creighton University, and the Business Office will have it available at registration each semester. Stafford loans are normally disbursed one-half in the fall and one-half in the spring.

Should you borrow for a loan period less than the regular school year, the Stafford loan will be disbursed into equal payments: the first at registration and the second payment after one-half of the enrollment period has passed (e.g., the middle of the semester). You must have an entrance and exit interview with the Financial Aid Office.

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- 1 Students withdrawing from summer Term 1B (six and one-half weeks and Term 2B (seven weeks) will be charged tuition and recurring fees as follows: during first week 10%, second week 40%, third week 80%, after third week 100%.
 - 2 Class day is any day of the term when any class is in session, regardless of whether or not a specific course is scheduled to be held on that day.
 - 3 The nonrecurring penalty and special service fees include late registration, deferred payment, late payment, change of course, change of graduate program, graduate aptitude test, special examination/evaluation, recording thesis binding, tuition grant administrative fee, University fee, locker, and transcript fees.

Stafford Student Loan (Unsubsidized)

This loan is nearly identical to the description above, except the Federal government does not provide in-school interest benefits. This loan accrues interest while enrolled. The aggregate amount which may be borrowed under the subsidized and unsubsidized Stafford Loan is \$73,000, including any undergraduate borrowed amounts. For more information, please contact the Financial Aid Office.

Easing Tuition Payments

Creighton University conducts its own Monthly Electronic Transfer (MET) program in cooperation with the student's local bank. Through this plan, students can make tuition payments in ten equal monthly installments. There is a \$45.00 service charge for this option. Monthly Electronic Transfer allows students to budget in regular installments the out-of-pocket expenses that remain to be paid after all financial aid is deducted from total costs. Contact the Business Office for further information.

Important

All financial aid advanced by Creighton University must be used to pay tuition, fees, and University board and room charges before any other direct or indirect educational costs. The stated limits refer to the maximum amount of a loan; the specific amount granted will be governed by funds available at the time of application.

STUDENT EMPLOYMENT

Departments and offices on campus hire a number of students each year. Many office jobs are filled by Federal Work-Study students, but other jobs are also available on campus, i.e., environmental services, dormitory desk work, food service, libraries, Development, Kiewit Fitness Center, and the Student Center.

The Student Employment Office maintains up-to-date listings of both on-and off-campus part-time and summer jobs. These listings are available through the computerized Job Listing System (JLS). Computers that can access JLS are located in the Student Employment Office, Brandeis 217, and through HELPLINE terminals in the Student Center, Criss III, University College, Reinert Alumni Library, and the Administration Building.

FINANCIAL AID SATISFACTORY ACADEMIC PROGRESS

Federal regulations require that minimum standards of academic progress be established for students receiving Federal financial aid programs. Creighton's standards for Graduate School students are found in a brochure, *Understanding Your Financial Aid Offer*, included with each official Notice of Award. You are encouraged to become familiar with these criteria.

ADMINISTRATION AND POLICIES GOVERNING GRADUATE STUDY

STUDENT RESPONSIBILITY

Each graduate student is personally responsible for completing all requirements established for his or her degree by the University, the Graduate School, and Department. It is the student's responsibility to inform himself or herself of these requirements. A student's adviser may not assume these responsibilities and may not substitute, waive, or exempt the student from any established requirement or academic standard. The University reserves the right to modify requirements at any time.

Although the University encourages the widest amount of student responsibility, with a minimum of administrative regulation, it expects each student to maintain appropriate standards in his or her academic and personal life. The University reserves the right to terminate the registration of any student who does not meet the standards acceptable to the University.

THE ACADEMIC YEAR

The academic year is divided in two semesters. The first begins in late August and ends before the Christmas holidays; the second begins in mid-January and ends in May.

There is a one week midsemester holiday in the fall, a short Thanksgiving recess, a winter vacation of approximately a month between semesters in the spring. There is a week midsemester holiday and a short Easter recess.

THE SUMMER SESSION

The annual Summer Session includes a three-week pre-session and two five-week terms. There are also six and one-half- and seven-week terms for graduate courses in business. These offer significant opportunities to students who wish to accelerate their studies and satisfy degree requirements or other interests, to teachers who wish to obtain credit for state certificates and/or for professional improvement, etc. A variety of short workshops and institutes on topics of current interest are part of each summer's offerings.

Students may register in one, two, or all three of the basic components of the Summer Session: The Pre-Session, Term 1, and Term 2. The student may earn three credits in the Pre-Session and up to six semester hours of credit in each of the two five-week terms. M.B.A. and M.S.I.T.M. students may register for six credit hours during each of the two special sessions (Term 1B — six and one-half weeks and Term 2B — seven weeks) designed for their programs.

UNIT OF INSTRUCTION

The semester hour is the unit of instruction used for computing the amount of work required for graduation. One semester hour is equivalent to one fifty-minute period of recitation or lecture per week for one semester. Two or three fifty-minute periods of laboratory ordinarily are considered equal to one period of recitation or lecture.

COURSE LEVELS

The arrangement and numbering of course offerings according to levels, from introductory and fundamental to advanced, is explained in the introduction to the section on Courses of Instruction. Under the numbering system, lower-division courses are numbered from 100 to 299; upper division from 300 to 599; and graduate from 600 to 999.

CLASS ATTENDANCE

Graduate students are expected to attend all lectures and laboratory sessions, except as excused by the instructor. In cases of obvious disinterest, as indicated by absences without reason, the student is subject to dismissal from a course by the Dean at any time during the term.

ACADEMIC LOAD

Twelve credit hours per semester (or six credit hours per summer term) is considered a maximal academic load for a full-time graduate student engaged in study for an advanced degree. Teaching and research fellowship holders are permitted nine to ten semester hours of credit during semesters in which fellowship obligations are incurred. Students who are engaged in full-time work (within or without the University) should not undertake study for more than six semester hours of credit during their full-time employment. A student who is registered for less than eight semester hours in a semester is classified a part-time student.

RESIDENCE

Ordinarily a student must devote two semesters and a summer session entirely to resident graduate study to complete the requirements for a Master's degree. It is strongly recommended that the major portion of the work for the Master's degree be done during the regular session. However, it is possible for students carrying full schedules in the summer session to meet the quantitative requirements for certain of the Master's degrees within the six-year time limit for completion of a program. Attendance at three summer sessions is regarded as fulfillment of the minimum residence requirement when a student registers for work exclusively in the summer sessions. One full calendar year in attendance is required to meet the minimum residence requirement for the Doctor's degree.

All work for the Master's degree must be completed within six calendar years from the date of credit of the first graduate course in the program; within eight years for the Doctor's degree.

Prerequisite courses taken at the beginning of a planned program do not count in the time determination. If for good reason a program is prolonged, courses taken at the beginning of the period will not be counted in the graduation program.

TRANSFER OF CREDIT

A graduate student's degree program needs to be undertaken largely at the direction of Creighton's faculty. Credit earned with grades A or B at **other** accredited graduate institutions may be considered for transfer at the time a student's plan of study is constructed. The acceptance of credit offered for transfer will be determined by the Graduate

Dean upon recommendation of the student's adviser. However, in no case will more than six transfer credits be applicable toward a Master's degree, nor will more than thirty transfer credits offered by the recipient of a Master's degree from another institution be applicable to doctoral studies at Creighton. Prerequisite undergraduate courses will be accepted in the plan of study (but not count as degree credit) provided they are taken from fully accredited undergraduate colleges. Allowance of credit toward a graduate degree for courses taken as a Special Student (nondegree status) in the Graduate School may not exceed nine semester hours.

THE DEGREE PROGRAM PLAN OF STUDY

The student must consult with his or her graduate adviser to prepare a degree program Plan of Study within the first 12 semester hours of residence for a Master's degree, and with the first year (30 semester hours) of doctoral study. The adviser and the student together will draw up a Plan of Study to be endorsed by the program director (or department chair) and forwarded to the Graduate Dean for approval. The program plan must list the following:

1. Courses required for removal of undergraduate deficiencies;
2. Courses taken prior to submitting the Plan of Study that apply to the minimum credit requirement;
3. Courses required by the degree program;
4. Elective courses (or course options) that may be taken in application to the minimum credit requirement;
5. Courses taken outside the degree program.

The Plan of Study serves as a record for the Graduate Office, the program director, the adviser, and the degree candidate for monitoring progress in the degree program. The Plan of Study may be revised only upon approval of the adviser, program director, and the Graduate Dean. Master's degree programs must be completed within six years; Ph.D. degree programs must be completed within eight years.

Master's-level students who are engaged in thesis research are expected to present certification of a minimum of one research tool proficiency; Ph.D.-level students must be certified for proficiencies in two research tools prior to the time of the written comprehensive examination.

Policy Statement on Readings and Independent Study Courses

Readings and independent study courses represent an important method for instruction of graduate students who wish to pursue special interests in their degree programs. However, not more than two such courses (6 semester hours) should be included in a 30-semester-hour program, since student interaction and student thesis research should occupy the major program commitment. When readings or independent study credit is assigned to a graduate student's program of studies, the method of instruction represents the contract teaching/learning style. Therefore, prior to authorization of Readings and/or Independent Study credit, program directors, and the graduate dean will require a

written summary of what work will be undertaken, identification of the specific resources to be used, the frequency of meetings between the student and his/her adviser, and the method of assigning quality evaluation to the project. Unless specific plans of this type and specific consent to the scope of independent study courses will not be authorized for graduate credit. This policy is intended to assure graduate-level instruction for the students, and to better define the responsibilities of students and their mentors for completion of graduate readings and independent study projects that are assigned degree credit. A copy of each contract will be kept in the student's file.

THESIS, DISSERTATION AND PROJECT STUDIES

Master's candidates register for thesis Course 799 and doctoral students register for Dissertation 899 in any term in which they are engaged in formal research in connection with, or other formal preparation of, the thesis or dissertation. Normally, the Master's thesis requirements can be met within two semesters. Master's candidates may in unusual circumstances with the permission of the Dean register for six hours of Thesis 799 in a single semester. Normally, however, the student will register for only one three-hour thesis course in a semester.

Because thesis, dissertation, and project studies often do not fit into a convenient timetable for completion, options for extended deadlines are provided. If several registrations are required for completion of the Master's thesis or the doctoral dissertation, the supervisor will assign an I (incomplete) at the end of the term if the work is incomplete but progressing satisfactorily. If the work is not progressing in an acceptable manner, the supervisor will assign a UN (unsatisfactory). The final letter grade for Thesis Course 799 or Dissertation Course 899 will be recorded when reported by the student's adviser after acceptance of the completed manuscript. The time limitation for removing an I for shorter problems or project courses is one calendar year from the date of the first class.

Detailed specifications and directions for preparing thesis or dissertation may be had from the chair of the department. A preliminary copy of the thesis or dissertation must be submitted to the adviser at least two and a half months before the date on which the degree is to be conferred. The thesis or dissertation in its final form must be approved and accepted by the adviser and the Dean a month before the degree is conferred.

No student will be permitted to seek publication of thesis or dissertation material without consent of his or her adviser. Violations of this regulation will lead to appropriate disciplinary action by the Dean.

GRADING POLICY

The following policy applies to all course work completed by graduate students at Creighton University.

1. Instructors are expected to explain to their students the grading policies, including the evaluation weights assigned to determination of the final grade in each course, during the first week of instruction.
2. Final grades assigned to graduate students shall be based upon at least three demonstrations of competence by the student which may include tests, papers, projects, recitation, etc.

3. Instructors are expected to provide students with an opportunity to demonstrate competence relevant to determination of the final grade by midsemester.
4. Students should be informed promptly of their scores on each demonstration of competence.
5. Course examinations are intended to evaluate achievement in the understanding and application of course content. Final examinations are scheduled by the Registrar.
6. In no case shall the grade on the final examination represent more than one-half of the course grade.
7. Final grades in course work undertaken by graduate students shall include evaluation of the student's capacity to organize and communicate (in written and/or oral form) the principal concepts and/or applications of the course content.
8. When only laboratory, workshop, and/or technical skills are the subject content of the course, or when conditions listed in Item 2 are not met, the instructor should assign a grade of satisfactory (SA) or unsatisfactory (UN) to indicate the student's participation and competence.

GRADING SYSTEM

A student's scholarship rating in each course is determined by the combined results of examinations and class (and laboratory) work as explained above. This rating is reported by the instructor in accordance with the grading system shown below. Grade reports are issued by the Registrar.

A	Indicates not only outstanding achievement but also an unusual degree of intellectual initiative
B	Indicates attainment above the average, satisfactory for 500-level courses
C	Indicates satisfactory but minimum quality work in courses above the 500-level
F	Indicates failure — no credit
AF	Indicates failure for excessive absences
WF	Indicates failure because of unauthorized withdrawal
I	Indicates work incomplete
X	Indicates absence from final examination
AU	Indicates audited course only — no credit
SA	Indicates work satisfactory
UN	Indicates work unsatisfactory — no credit
W	Indicates official withdrawal from a course — no credit

SA and UN are used to report progress or performance in several instances, e.g., when a course carries no credit, or when laboratory and technical skills only are the subject content of the course; otherwise, an I is given at the end of the term if the work

is incomplete but progressing satisfactorily. Use of SA/UN instead of regular grading in any other course is not permitted. Credit earned with SA (Satisfactory) may be counted toward graduation but does not affect the student's QPA; however, UN (Unsatisfactory) functions as a failure in computing the quality-point average.

Incomplete and Absence from Final Examination

The I and X are marks used, as explained below, to reflect a student's irregular status at the time final end-of-term grade reports are due.

I (incomplete). A student who has failed to fulfill all requirements of a course may petition the instructor before the close of the term to assign an end-of-term mark of I indicating incomplete performance. An I may be awarded to graduate students only for reasons of illness, unavoidable travel breaks in the program, or for incomplete work on a thesis or dissertation and with approval of the Dean of the Graduate School *for the foregoing reasons*. An I (incomplete) will not be granted to a student who has been excessively absent during the term or who has simply failed to complete the work of the course before the close of the term without an exceptionally good reason.

The responsibility for completing all course work rests with the student. The maximum time limit for clearing an incomplete, except in thesis or dissertation, is one year from the start of the course. If the incomplete is not cleared within this limit, it becomes a permanent I; and the student must reregister for and satisfactorily complete the course if credit is desired.

The I does not affect the grade-point average. However, should a student have more than one-third of his credits for a single registration period outstanding as Incomplete he will not be permitted to reregister for additional graduate credit until the incompletes are cleared.

An X is given to a student who missed the regularly scheduled final examination, and the X functions as a failure until it is cleared. If the reason for absence is acceptable to the Dean, an examination must be taken as soon as possible but not later than one month from the date of the regular final examination. A permanent grade is recorded after the final examination is taken. If the examination is not taken as specified or if the reason for absence was not acceptable, the student receives F in the course.

A student who is both incomplete and absent from the final examination will receive both an I and X (IX), which will function as a failure until cleared as specified above.

When an I or X (original entry) is cleared and a final grade, either passing or failing, is assigned, the final grade is entered on the student's permanent academic record beside the I or X and the I or X is bracketed by parentheses. Hence, these marks remain permanently on the student's record.

Grade Reports

Grade reports are made available to students at the end of each term (semester or summer session) in person through their dean or adviser. Additionally, a graduate student who is enrolled in a 500-level course, will receive a midsemester grade report for

that course. A copy of the grade report is also mailed to one of the following: (1) to the parent or guardian if requested by the student; (2) to the superior of religious; or (3) to the student at the home address if the report is not mailed as indicated in (1) or (2). It should be noted that Federal law accords parents of dependent students (regardless of the student's age) the right to grade reports without prior consent of the student. After grades are submitted by the instructors, grade reports are assembled and issued by the Registrar's Office.

QUALITY REQUIREMENTS

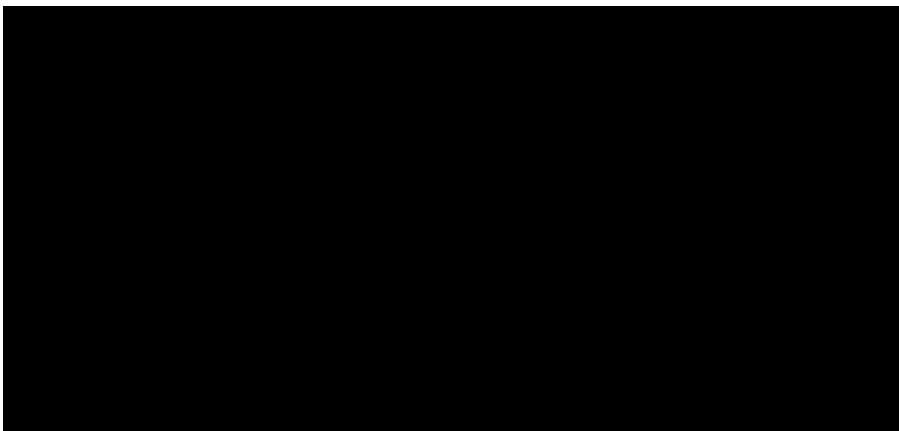
It is expected that students in the Graduate School will do a higher quality of work than those in the undergraduate schools. Since no degree is conferred in consequence of mere time fulfillment or credits gained, the student must show performance of a superior quality.

A minimum grade of B is required to earn graduate credit in 500-series (advanced undergraduate) courses; in courses numbered 600 and above, open exclusively to graduate students, the minimum satisfactory grade is C. It does not follow, however, that minimum satisfactory grades will qualify for a degree. Graduate degrees will not be awarded to students who do not possess an overall average of B in the graduate program. Furthermore, graduate students are allowed to incur C grades in no more than six semester hours and remain in good standing. The C+ grade is not applicable to rating graduate students in courses being taken for graduate credit (500-series and above.)

The ability to express oneself in idiomatic and grammatically correct English will be regarded as a determining factor in assigning grades, and no one will be allowed to pursue a graduate program unless he or she consistently demonstrates this ability.

ACADEMIC PROBATION AND DISQUALIFICATION

Whenever a student falls below the 3.0 (B) level of achievement the student is placed on probation for one semester. A student who fails to remove probation within one semester is disqualified from the Graduate School. A student who accumulates more than two C's, or any one grade less than C, in courses in his or her graduate program is disqualified from the Graduate School.



APPEALS AND PETITIONS

All appeals for removal of probation, appeals of academic suspension, and petitions for change in program are heard by the Board of Graduate Studies. Petitions for transfer of credit are acted upon by the Dean. Petitions are filed in writing to the Dean through the major adviser or program director. In unusual circumstances, appeal of ruling by the Dean may be brought directly to the Board by the student. Student grievances are heard and judged by the complete Board, including elected graduate faculty and students and appointed graduate faculty.

Grade Appeals

The instructor has jurisdiction in determining grades; however, the student has the right to appeal a grade that the student believes to be in error. The appeal process may involve the following steps (the issue may be resolved at any level):

1. The student confers with the instructor involved.
2. The student and instructor (preferably together) confer with the chair of the department or program director.
3. When the foregoing steps do not resolve the issue, the student may initiate a formal written appeal to the Dean. Normally, the Dean will forward such appeal to the appropriate committee for its review and recommendation. A formal appeal should not be entered upon lightly by a student, or lightly dismissed by an instructor. A formal written grade appeal may be made no later than the sixth week of the following semester.

GRADUATE SCHOOL POLICY ON ACADEMIC RESPONSIBILITY OF GRADUATE STUDENTS

Rationale

All universities are concerned with the cultivation of specialized knowledge and the development of technical skills, and by introducing graduate and post-doctoral students to these disciplinary arts, they preserve, transmit and refine the current body of knowledge and lay claim to their definitions of academic excellence. While research contributing to the advancement of a particular form of intellectual inquiry marks the completion of traditional graduate plans, the end goal of the plan lies in the achievement of certain ways of thinking.

Achievement of graduate educational goals lies in development of analytical independence and conceptual self-consciousness; in the stimulation of creative imagination and critical abilities; in adoption of disciplined thinking and *commitment to personal honesty, intellectual integrity, analytical consideration of competing claims, and respect for the contributions of others* to a common intellectual enterprise. Creighton University has a reputation for developing people of high professional competence; our best graduates combine professional excellence with a healthy capacity to see technical problems in their larger contexts, and to combine imagination, intellect and action into forming a Christian wisdom that extends beyond mere convention.

Policy on Academic Honesty

In keeping with its mission, the University seeks to prepare its students to be knowledgeable, forthright, and honest. It expects and requires academic honesty from all members of the University community. Academic honesty includes adherence to guidelines established by the University, its Colleges and Schools and their faculties, its libraries, and the computer center.

“Academic or academic-related misconduct” includes, but is not limited to, unauthorized collaboration or use of external information during examinations; plagiarizing or representing another’s ideas as one’s own; furnishing false academic information to the university; falsely obtaining, distributing, using or receiving test materials; falsifying academic records; falsifying clinical reports or otherwise endangering the well-being of patients involved in the teaching process; misusing academic resources; defacing or tampering with library materials; obtaining or gaining unauthorized access to examinations or academic research material; soliciting or offering unauthorized academic information or materials; improperly altering or inducing another to improperly alter any academic record; or engaging in any conduct which is intended or reasonably likely to confer upon one’s self or another an unfair advantage or unfair benefit respecting an academic matter.

Further information regarding academic or academic-related misconduct, and disciplinary procedures and sanctions regarding such misconduct, may be obtained by consulting the current edition of the *Creighton University Handbook for Students*. However, students are advised that expulsion from the University is one of the sanctions which may be imposed for academic or academic-related misconduct.

The University reserves the right to modify, deviate from, or make exceptions to the foregoing or to the *Handbook for Students* at any time, and to apply any such modification, or make any such deviation or exception applicable to any student without regard to date of admission application or enrollment.

ADMISSION TO CANDIDACY FOR AN ADVANCED DEGREE

Admission to the Graduate School does not imply admission to candidacy for the Ph.D. degree. In order to be advanced to candidacy for the Ph.D. degree a student must have previously been admitted to the Graduate School, have completed approximately half the number of hours in the degree program, and passed the comprehensive examination. For the Master’s degree, however, the comprehensive examination can be used either to advance students to candidacy for the Ph.D. or, in the case of research-based degrees, be incorporated in the thesis defense.

Not later than September 15 for December graduation, February 1 for May graduation, and May 1 for August graduation, the student must file with the Dean, if the program requires a thesis or dissertation, a statement of the projected research problem, its objective. This statement must have been previously approved by the adviser and the chair of the department. In addition, each student expecting a degree must also make specific application for the degree as explained later in this section.

COMPREHENSIVE EXAMINATION

Each program requiring a written comprehensive examination determines the content of that examination and administers the examination. The student is provided an opportunity to demonstrate general knowledge of the discipline and to give evidence of analytical abilities. The comprehensive examination represents the culmination of intensive formal study and serves to demonstrate proficiencies required for the cultivation of the habit of inquiry. The student should consult with his or her adviser and the faculty throughout the formal study in determining what preparation will be expected.

The comprehensive examination will be scheduled upon recommendation of the student's adviser and program director; ordinarily, the completion of the course work required in the Plan of Study should be anticipated in the semester during which the examination is to be taken. The student is advanced to candidacy upon passing the comprehensive examination.

The program director (or department chair) will notify the Dean of the Graduate School whether the student has passed or failed the comprehensive examination. A candidate who has failed the comprehensive examination will be permitted to take it only one more time, but only after a one-semester study period has been completed. Failure of the comprehensive examination disqualifies the student for the thesis examination or dissertation defense and/or graduation.

THESIS EXAMINATION OR DISSERTATION DEFENSE

A degree candidate who has or will have satisfactorily completed the minimum credit Plan of Study, the language and/or other research tool requirements, the comprehensive examination, and the draft of his or her thesis or dissertation will be permitted to undertake an oral defense of the thesis or dissertation. The thesis or dissertation committee will have conferred with the candidate and had a suitable copy of the manuscript in their hands at least 30 days prior to the oral examination and defense.

The Master's degree candidate's committee will be chaired by the student's major adviser and will include two other faculty members qualified in the student's major discipline and a graduate faculty observer from outside the major department appointed by the Dean of the Graduate School.

The Doctor's degree candidate's committee shall consist of the major adviser (chair), two faculty members qualified in the major discipline, two faculty members qualified in support areas of study, one expert faculty member (or visiting professor) from the subject of specialization, and a graduate faculty observer from outside the student's major department. The subject of the examination shall be the background, methods, results, and conclusions of the student's dissertation and the relationship of these results and conclusions to the major discipline. The dissertation defense will be open to all graduate faculty, although faculty from outside the committee may not participate directly in the examination.

APPLICATION FOR DEGREE

Each candidate must file with the Registrar a formal application for the degree. This must be done in advance of the time one wishes to receive the degree, namely, by Octo-

ber 1 for graduation at the end of the First Semester, by February 15 for graduation at the end of the Second Semester, and by June 15 for graduation at the end of the Summer Session.

If for some reason a degree is not awarded after application is made, it will be necessary for the student to file another Application for Degree by the deadline of the term when the degree requirements are expected to be met.

Eligibility of a student for a degree depends on successful completion of all requirements established for the degree sought. Further, to receive a degree a candidate must be of good moral character and must have discharged all financial obligations to the University.

COMMENCEMENT

Annual University Commencement ceremonies are held in May and December. Students who complete their degree programs in the Spring Semester **are required to be present** at the Annual Commencement Exercises in May to receive their degrees. Students who complete their degree programs in the Fall Semester may attend Commencement ceremonies in December. Diplomas will be mailed upon confirmation of the completion of all degree requirements by the respective Dean. Students who complete their degree programs during the summer receive their degrees at the end of the Summer Sessions, but no ceremony is held; these students may participate in the preceding May Commencement. All candidates who receive degrees at the end of a Fall Semester or Summer Session are listed in the next Annual Commencement Program.

NOTE: A student may participate in only one Commencement ceremony for each degree granted.

To participate in the May Commencement, a candidate must have successfully completed all degree requirements and must be approved for graduation, or be able to and plan to complete all requirements by the date for conferral of degrees in the following August. The respective deans of the Schools and Colleges of the University shall have the responsibility for clearing all participants in the Commencement. Those participants in the May ceremony who have not completed all degree requirements shall be so designated in the Commencement Program.

DISCIPLINE

The primary purpose of discipline is educational in nature and is aimed at the development of responsible student conduct.

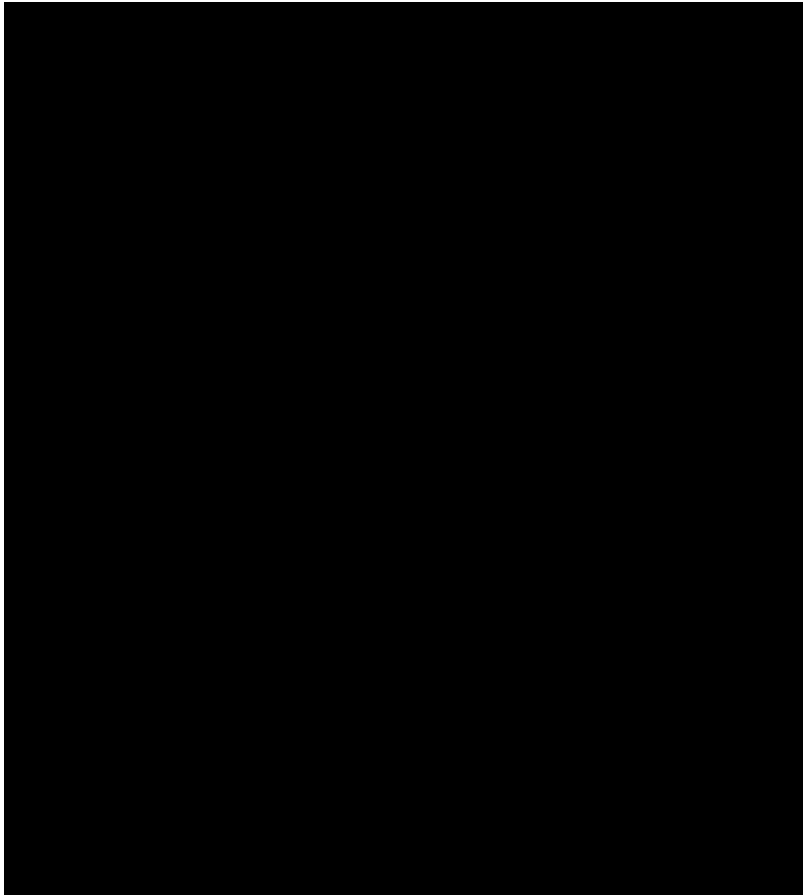
The University has the right and duty to protect its educational purpose through setting and maintaining standards and regulations considered essential to its purpose. The *Student Handbook* describes disciplinary procedures and penalties, which may include suspension or expulsion from the University.

CONFIDENTIALITY OF STUDENT RECORDS

Creighton's policy relating to the confidentiality of student records is in keeping with the "Family Educational Rights and Privacy Act of 1974 as Amended". Information about a student (or former student) will not be released without the request or consent of the student other than in the exceptions stated in the Federal Act. A student is also accorded the right to inspect and review his/her education records. A summary of the University's Student Records Policy is published in the *Student Handbook*. A copy of the complete policy statement may be obtained in the Office of the Registrar or in the office of the Dean of the student's school or college.

TRANSCRIPTS

A copy of the student's academic record is called a transcript and is issued by the University Registrar upon written request of the student. A special Request for Transcript form is available at the Registrar's Office, A226. A fee of \$5.00 is charged for the first transcript and \$1.00 for each additional transcript in the same order. Copies are not made of transcripts of records on file from other institutions. Any additional copy of these must be requested by the student direct from the original issuing institution.



THE GRADUATE PROGRAMS

DEGREES AND MAJOR FIELDS OF STUDY

For the degree of Master of Arts Plan A or Plan B

Christian Spirituality	Theology
International Relations	Liberal Studies
English	

For the degree of Master of Science

Plan A

Atmospheric Sciences
Biomedical Sciences
Biochemistry
Bioorganic Chemistry
Cell and Developmental Biology
Molecular Biology
Neurobiology
Physiology
Mathematics
Medical Microbiology
& Immunology
Nursing
Pharmacology
Physics

Plan B

Atmospheric Sciences
Counseling
Elementary-School Counseling
Secondary-School Counseling
School Counseling
Community Counseling
College Counseling and Student
Development Services
Education
Elementary School Administration
Secondary-School Administration
Mathematics
Physics

For the degree of Master of Business Administration

Business Administration

For the degree of Master of Computer Science

Computer Science

For the degree of Master of Science in Information Technology Management

Information Technology Management

For the degree of Doctor of Philosophy

Biomedical Sciences
Biochemistry
Bioorganic Chemistry
Cell and Developmental Biology
Molecular Biology
Neurobiology
Medical Microbiology & Immunology
Pharmacology

NOTE: For a detailed description of the various graduate programs, their objectives, prerequisites for admission, and requirements, please refer to the following section of this bulletin on Courses of Instruction. The department (subject/majors) and programs are listed in alphabetical order.

MASTER OF ARTS AND MASTER OF SCIENCE

Programs for these degrees are organized under three plans: The first, *Plan A*, requires a thesis, while the two divisions for *Plan B* do not. *Plan A* emphasizes depth of study and training in research methods in a specialized field. *Plan B* emphasizes breadth as well as depth in the pursuit of graduate-level study of a major field with one or two minor areas.

The degree of *Master of Arts* (M.A.) is conferred under Plan A or Plan B in the fields of Christian spirituality, English, international relations, ministry, and theology. Minor work is available in economics, political science, and theology. Under Plan B the degree is conferred for studies with one or two minors in addition to the major field in the areas of communication arts, humanities, and social studies.

The degree of *Master of Science* (M.S.) is conferred under Plan A in the fields of atmospheric sciences, biomedical sciences, mathematics, medical microbiology and immunology, nursing, pharmacology, and physics. Under Plan B the degree is conferred for area studies in the fields of atmospheric sciences, mathematics, and physics; the following specialized areas of counseling: elementary-school counseling, secondary-school counseling, school counseling, community counseling, and college counseling and student development services; and the following specialized areas of education: elementary-school administration, secondary-school administration.

MASTER OF BUSINESS ADMINISTRATION

The degree of *Master of Business Administration* (M.B.A.) is conferred for work done in an evening program of graduate-level courses in the area of business administration. The primary objective of this evening program is to provide an opportunity for qualified men and women to develop knowledge, abilities, attitudes, and understandings that will constitute a foundation for their growth as effective administrators and creative leaders in business, industry, and government. Effective managerial decision-making is stressed rather than advanced study in a single area of concentration.

M.B.A.-J.D. Combined Program

The College of Business Administration, which administers the M.B.A. program, and the School of Law, which administers the J.D. program, have defined courses that can be used to satisfy elective requirements in each program. This enables students seeking both the *Master of Business Administration* and *Juris Doctor* degrees to request acceptance of up to 15 hours of these defined courses, thus reducing the time required to secure both degrees by approximately one semester. Since all MBA courses are offered in the evening (including Summer Session), it is possible to complete both programs in a total of three calendar years.

Each candidate for the coordinated program must make separate application to, and be independently accepted by, the School of Law and the College of Business Administration. Although the student must meet all admission requirements of each program, acceptance does not have to occur simultaneously. However, the student must make application for the second program while still actively enrolled in the first to be considered for the combined program. The Law School will accept in transfer toward the J.D. degree a maximum of nine credit hours of the M.B.A. curriculum. The M.B.A. program

will accept in transfer toward the M.B.A. degree a maximum of six credit hours of the Law School curriculum in elective courses for which the student receives a grade of C or better on the Law School scale. Uniform Graduate School requirements will be maintained for M.B.A. graduation. The final decision on transferability of credits rests with the Associate Dean of the Law School and the Director of Graduate Business Programs. Further details concerning the coordinated program may be obtained from the Associate Dean of the Law School or the Associate Dean of the Eppley College of Business Administration.

MASTER OF SCIENCE IN INFORMATION TECHNOLOGY MANAGEMENT (M.S.I.T.M.)

The Master of Science in Information Technology management (MSITM) is a new 35 credit hour program, implemented in the Spring, 1996, that is designed to creatively synergize information technology and management practices. It is applied in orientation, and current to meet the demands of a constantly changing technological environment. Students receive comprehensive information technology education, while working toward the specialization best suited to their professional goals. The tracks for specialization are Systems Integration and Telecommunications, Systems Development Methodology and CASE, and Reengineering, Change Management and Policy Issues in ITM. The MSITM was designed in consultation with area businesses and professionals, including the Applied Information Management (AIM) Institute.

Requirements for Second Master's Degree (M.B.A. or M.S.I.T.M.)

Persons who have earned an M.B.A., or M.S.I.T.M. degree at Creighton University may complete the requirements for and earn a second degree, either an M.B.A. or M.S.I.T.M. The student must complete all the requirements for the second degree except for six semester hours (ITM 711 or MBA 731 and 3 elective hours).

The second degree program requires completion of an additional 27 semester hours of credit in required and elective courses. If any of the courses required in the second degree program were completed as electives in the first degree program, the student, with the approval of the adviser, will select alternate courses appropriate to the second degree program.

MASTER OF COMPUTER SCIENCE (M.C.S.)

The graduate program in computer science is designed primarily for students with a bachelor's degree in computer science. The program provides the graduates with a core of common skills and experience in hardware, software, algorithms, languages and data structures while focusing on specialized areas of artificial intelligence and knowledge engineering; information processing and management; and computer applications of mathematical sciences. This breadth of general knowledge of the computing field coupled with in-depth substantive knowledge in specialized areas is designed to provide a solid foundation for immediate job success as well as longer term career objectives.

A *Master of Computer Science* degree is offered with both a thesis (option A) and non-thesis (option B). Students in option A will be required to complete a total of 30 approved credit hours in course work and submit a thesis. Students in option B will be required to complete a total of 33 approved credit hours of course work and submit a

major report. In either option the student would have the opportunity to specialize in one of the three areas: artificial intelligence and knowledge engineering, computer applications of mathematical sciences, and information processing and management. The program is open to candidates engaged in full-time study and also to candidates employed in industry and business who wish to study on a part-time basis. Students will be allowed freedom to choose their own area of concentration and their adviser.

DOCTOR OF PHILOSOPHY

The degree of *Doctor of Philosophy* (Ph.D.) is offered in the departments of Biomedical Sciences, Medical Microbiology and Immunology, and Pharmacology. The program will ordinarily consist of 90 semester hours beyond the Bachelor's or 60 hours beyond the Master's degree. Evidence of exceptional scholastic attainment and high aptitude for research will be demanded. The student must maintain satisfactory grades, pass a qualifying examination, and meet the requirements of the Graduate School and the major department. The Ph.D. degree will be awarded after fulfillment of all requirements and successful defense of the dissertation.

SUMMARY OF GENERAL REQUIREMENTS FOR ADVANCED DEGREES

The requirements for graduation depend upon the particular program of study undertaken. Specific program and departmental requirements are listed in the next section of this Bulletin on Courses of Instruction. The following requirements apply to all programs:

1. Admission to advanced study programs requires the presentation of complete transcripts of all collegiate work, three letters of evaluation, adequate GRE or GMAT scores and a Bachelor's degree (or equivalent) with a major in the discipline to be undertaken in graduate study.
2. The candidate for an advanced degree must earn at least a 3.0 (B) average in all graduate work taken at this University and have accumulated a minimum residence requirement of 24 credits if in a Master's program with the thesis option (Plan A), 27 credits if in a Master's program which does not require a thesis (Plan B), or 60 credit hours beyond the Master's degree if in a Ph.D. program.
3. Master's degree programs with the thesis option must contain a minimum of 30 credits, and non-thesis programs, a minimum of 33 to 36 credits; Ph.D. programs must contain a minimum of 90 credits beyond the Bachelor's level.
4. No graduate-level course (600-899 series) with a grade lower than C may be applied toward the fulfillment of degree requirements. Courses taken from the advanced undergraduate series (500-level) may be applied toward degree requirements provided they are passed with a grade of B or higher, and provided they do not exceed one-half the course credits required in the entire program for a Master's degree. In Ph.D. programs, approved 500-level courses may be included within the first 30 hours; thereafter all courses must be exclusively graduate level.

5. A thesis or project (790 series) must be completed in partial requirement for a Master's degree with no fewer than three or more than six credits allowed toward fulfillment of Master's degree research requirements. Doctoral dissertation credits may accumulate to 20 hours in the Ph.D. program, and the total research credit permitted in Ph.D. credit requirements may not exceed 45 semester hours.
6. A thesis, dissertation or project and a final comprehensive examination must be satisfactorily completed to qualify for graduation. Failure of the comprehensive examination or the thesis/dissertation requirement of a program is failure of both options. The comprehensive examination may be repeated once after a minimum one-semester study period.
7. All requirements for Master's degrees must be completed within six years of the date when the program was initiated (i.e., when the first credit applying to the degree was earned). Ph.D. programs must be completed within eight years.
8. A graduate student who expects to receive a degree within a particular academic term must have been advanced to candidacy, applied for the degree, and fulfilled all degree requirements during that term. Consult the calendar of deadlines. The student must ordinarily be enrolled during the term in which the degree is expected.
9. Proficiency of a student in any and all parts of the curriculum is properly ascertained by the graduate faculty. A favorable vote of the faculty is required for a student to receive an advanced degree.

COURSES OF INSTRUCTION

INTRODUCTION

The courses of instruction are listed here by department (subject) or program in alphabetical order.

Only the names of those faculty members of each department who are giving graduate instruction are listed in this bulletin.

Three-letter symbols are used to designate the different departments (subjects), for example, BMS for Biomedical Sciences, EDU for Education, MTH for Mathematics, etc. These symbols are used to identify the subject area of course offerings in schedules, grade reports, transcripts of records, etc.

The courses listed in this bulletin are a statement of the plans of the various departments covering the period from the 1996 Summer Session to the Second Semester of 1997-98. Also included as a matter of record are courses that were given during the period covered by the last issue of the *Bulletin* for the Graduate School (Vol 79, No. 2) published in July, 1994, but did not appear in that issue. A special bulletin for the courses offered in the Summer Session is published early each year.

Some required graduate courses are offered annually; some courses are offered biennially; others are offered in three-year cycles, or upon sufficient demand.

The University reserves the right to modify or to cancel any of the courses listed.

COURSE NUMBERING SYSTEM

Courses appearing in this *Bulletin* are numbered according to the following system:

001-099	Pre-College level courses (not applicable to a degree).
100-299	Lower-division courses (when applicable, 100-199 freshmen; 200-299 sophomores) undergraduate credit only.
300-499	Upper-division courses (when applicable, 300-399 junior; 400-499 senior) undergraduate credit only.
500-599	Advanced upper-division courses in which graduate students may enroll and receive graduate credit. (It is assumed that graduate students will perform more requirements and be graded more strictly than undergraduates.)
600-799	Graduate courses. (Master's and Doctoral level).
800-899	Graduate courses. (Limited to doctoral candidates).
900-999	Post-doctoral (or post-terminal) degree courses only.

Occasionally departments revise the sequence of their courses. When a course number is changed, the former number is retained in parentheses for convenience in identification.

The credit value of each course is included with its description. Unless indicated otherwise, the class meetings per week normally equal the number of semester hours of credit shown for the course. For example, for a three-semester hour course there are three fifty-minute class periods or their equivalent held each week of the semester. During summer sessions, class periods are held five days a week and the class periods are lengthened; hence, an equivalent amount of class time is devoted to a course whenever it is given.

KEY TO SYMBOLS

The standard course description includes a variety of symbols or abbreviations indicating essential information. The following is a sample course description with the individual symbols explained in the order in which they appear in that description.

BMS 605 Molecular Endocrinology (3) I 1995-96, AY
 Study of the function of endocrine glands at the organismal, cellular and molecular level. 3C & D. P: BMS 601 or equiv. or IC.

BMS Department (subject or discipline) abbreviation. Standard three-letter symbols are used throughout the University to identify the subject fields.

605 Course number. If a course has been renumbered, the old course number appears in parentheses following the new number.

Molecular Endocrinology—Course title

(3) Credit value of the course in terms of number of semester hours of credit.

I Term offered. I indicates fall semester; II indicates spring semester; S indicates summer session; PS indicates pre-session; W indicates winter interterm; M indicates mini-semester.

1995-96 Year in which course offered. If no year designation is given, course is offered each year during the term(s) indicated, unless the symbol OD (on demand) appears indicating that the course is offered only when there is sufficient demand.

AY Alternate year, indicating that the course will be offered every other year after the term and year shown.

S (OD) Indicates the course is also offered in the summer session on demand.

ENY, ONY Indicate that course is offered in term shown of even-numbered years (ENY) or odd-numbered years (ONY).

3 C & D Class structure. R, L, S, C, D, Q indicate "recitation—lecture," "laboratory," "studio," "conference," "discussion," "quiz." Hence, 3C & 3D indicate three hours of conference and three hours of discussion per week. For courses consisting of lecture-recitation periods only, the number of class hours per week, unless indicated otherwise, is the same as the credit value of the course and is not specified in the course description.

P Prerequisite: the preliminary requirement that must be met before the course can be taken. When prerequisites are set forth in the introductory statements preceding the course listings, they apply as indicated even though not repeated with the individual course descriptions.

- CO Corequisite: a requirement, usually another course, that must be completed in the same term.
- IC, DC IC, instructor consent, and DC, department consent, signify that a student must have the permission of the department or instructor in addition to or in lieu of other course prerequisites.
- NOTE: Not all of the foregoing information may be noted in any individual course.

ANATOMY

See Department of Biomedical Sciences

ATMOSPHERIC SCIENCES (ATS)

Associate Professor Douglas (Chair); Assistant Professor Morss (Director of Graduate Program); Instructor Naegelin; Adjunct Assistant Professors McAtee and MacDonald; Adjunct Instructor Linskens.

Programs and Objectives

Master of Science (M.S.) Program

Creighton University offers courses and experience leading to the Master of Science degree with a major specialization in Atmospheric Sciences. The purposes of this program are to provide professional-level graduate education appropriate to preparation for advanced careers in meteorology, and the environment, with such agencies as the National Weather Service, the United States Air Force Weather Service, and various environmental and meteorological research and management organizations within the government and private industry. The program is available under a thesis (Plan A) or non-thesis (Plan B) approach, as outlined below.

Prerequisites for Admission

Applicants holding a Bachelor of Science degree in meteorology, physics, or related natural and/or physical sciences, with undergraduate grade point averages of at least 3.0 are preferred. Graduate Record Examination (GRE) scores are required of all applicants; no advanced tests on the GRE are required.

Degree Requirements

The Masters Degree program is structured as outlined in the following paragraphs. The overall basic requirements are presented in Table 1.

Table 1. Credit Hour Requirements

Total Credits Required: 33

Minimum Credit Hours from Courses 600-Level and above: 18

Considering the diversity of student backgrounds presented by the prospective students, the Masters Degree program offers a generalized approach built upon a basic foundation (500-level course requirements), then branching to a structure associated with specialized areas of concentration (600-level course requirements). The students may take either of two approaches to completing the degree, Plan A, the traditional original research thesis or Plan B, the option to take a non-thesis approach. Under Plan B, the student may complete 33 credits of regularly scheduled classes, or may complete their studies with ATS 797, leading to a Departmental-level seminar and paper of potentially publishable quality and length.

A. Core Preparation Requirements:

The Masters Degree program offers two core tracks, with further specialization and concentration becoming available as the student's work progresses. This course sequence is designed to prepare the students for the more rigorous demands of the 600-level offerings required for degree completion. Students would be required to take at least 15 hours from either core track.

A1. Atmospheric Diversity.

Designed for students interested in enhancing current forecasting skills or diversifying into broader areas for continuing future studies, the contents of this core area are presented in Table 2.

Table 2. Atmospheric Diversity Course Content

542	Radar Meteorology
548	Solar-Terrestrial Relations
553	Tropical Meteorology
555	Satellite Meteorology
* 561	Synoptic Meteorology I
562	Synoptic Meteorology II
564	Statistical Applications
* 571	Dynamics I
572	Dynamics II
574	Stratospheric Dynamics

* **Note:** Students entering the Masters Degree program who do not have a Bachelors in Meteorology/Atmospheric Sciences may take these classes for inclusion in their degree program.

A2. Environmental Diversity.

Designed for students interested in the identification, measurement, and assessment of environmentally oriented aspects of atmospheric sciences, the contents of this core area are presented in Table 3.

Table 3. Environmental Diversity Course Content

CHM 506	Environmental Chemistry
541	Diffusion, Pollution & Environmental Impact
542	Radar Meteorology
544	Hydrology
548	Solar-Terrestrial Relations
555	Satellite Meteorology
562	Synoptic Meteorology II (4 Hours)
564	Statistical Applications
574	Stratospheric Dynamics

B. Individual Advanced Core Specialization:

The student is presented with the opportunity to focus the remainder of their program in one or more areas of study depending upon their interest and need. At least 18 hours are to be taken from these additional Department offerings. No more than 3 hours may be credited towards a degree from among 646, 670, and/or 793, and up to 6 hours from 795/(Independent Study), 797(Independent Research)/799(Master's Thesis). Table 4 lists advanced core offerings of the recent past, illustrating the diversity available to the student.

Table 4. Advanced Core Offerings

615	Radar and Severe Storms
624	Advanced Dynamics I
625	Advanced Dynamics II
631	Numerical Weather Prediction
632	Advanced NWP
643	Radiation through the Atmosphere
647	Solar-Terrestrial Relations
674	Aeronomy
663	Weather Systems Analysis
675	Adv. Stratospheric Dynamics

795/797 Non-thesis Track (Plan B)

797/799 Thesis Track (Plan A)

Inquiries and applications are invited from the Dean of the Graduate School, Creighton University, Omaha, Nebraska 68178.

- ATS 516 Computer Methods in Atmospheric Sciences (3) OD**
Intermediate computer techniques currently used in atmospheric science. Emphasis on graphic methods, fundamental techniques of numerical prediction, parallel processing, and artificial intelligence. Applications of these methods to short-term forecasting. P: ATS 315.
- ATS 531 Operational Prediction Models (3) I**
Examination of the use of forecast models from the National Meteorological Center (LFM, Spectral, NGM). Additional models from other sources will also be examined (UKMET, ECMWF, USAF, and USN). Study of model domain, resolution and formation with respect to physical processes. Model performance is described and scrutinized (with respect to systematic errors and to particular synoptic situations). Comparative diagnostics of forecast and observed fields employed to examine model behavior. P: ATS 562 or IC.
- ATS 532 Objective Meteorological Analysis (3) 1994**
Application of techniques and principles for temporal and spatial computer analysis of atmospheric data based on dynamical concepts, with a focus on the structure, movement, and development of weather systems. Topics include data time series, statistical inference techniques, Fourier analysis, and map projections and grid systems used in meteorology. P: ATS 571 and computer programming.
- ATS 541 Atmospheric Diffusion, Air Pollution, and Environmental Impact Analysis (3) OD (Same as NSC 541)**
Survey of the theoretical and practical aspects of diffusion, dispersion, and turbulent transport of pollutants in an atmospheric boundary layer. Includes observational and instrumentation techniques; plume models; regional pollution transport; and diffusion from point, line and area sources. Chemical and physical transformations of the pollutants, precipitation scavenging, and dry deposition are studied. Reviews Federal environmental laws, air quality standards, environmental impact assessments, ethics, and guidelines for writing environmental impact statements. P: ATS 113 or equiv.
- ATS 542 Radar Meteorology (3) I**
The theoretical and practical aspects of weather radar. Stress placed on the capabilities and limitations of severe storm investigation. P: MTH 245; PHY 212; or IC.
- ATS 544 Hydrology (3) I 1994-95 (Same as NSC 544)**
Study of the waters of the earth, especially with relation to the effects of precipitation and evaporation upon the occurrence and character of water in streams, lakes, and on or below the land surface. In terms of hydrologic cycle, the scope of this course may be defined as that portion of the cycle from precipitation to reevaporation or return of the water to the seas. P: ATS 113 or 231.
- ATS 545 Mesoscale Analysis (3) II**
Examination of the theory of convection as related to models of squall lines and thunderstorms and the application of this theory to the forecasting and analysis of sub-synoptic scale systems. P: ATS 562 & 571.

- ATS 547 Applications of Remote Sensing (3) OD**
Examination of general and specific applications of remote sensing of the environment. Satellite, ground based, and airborne system; data analysis and decision methods; spatial and time multispectral and multivariate analysis; analysis and evaluation of water, terrain, mineral, forest, and soil resources. P: ATS 113.
- ATS 548 Introduction to Solar-Terrestrial Environment (3) II 1994-95, AY**
Course designed to acquaint the student with the basic phenomenology associated with solar processes and activity, and the impact of these processes upon the earth and its atmosphere. Designed to familiarize the student with the concepts of upper atmospheric energetic processes and their influences upon everyday activities. P: MTH 246 & PHY 212.
- ATS 552 Boundary Layer Meteorology (3) OD**
Structure of the boundary layer, surface energy budget, vertical profiles of temperature, humidity and wind, turbulence, Monin-Obukhov theory. Determination of surface heat and moisture fluxes. Some discussion of applications to diffusion and dispersion of substances in the atmosphere. P: ATS 572 or equiv.
- ATS 553 Tropical Meteorology (3) S**
Characteristics of the tropical atmosphere including convection, boundary layer processes, local and diurnal weather phenomena, mesoscale tropical systems, tropical storm structure, and energetics. This course relies heavily on satellite interpretation of tropical cloud systems. P: ATS 113.
- ATS 555 Satellite Meteorology (3) II**
Examines the relationship between clouds and other atmospheric features as revealed by weather satellites and applies this information to analysis and forecasting of weather systems. Seasonal satellite film loops are used to identify the evolution of circulation systems. Includes a brief introduction to aerial photography and landscape photography. P: ATS 113 or IC.
- ATS 556 Introduction to Physical Oceanography (3) OD (Same as NSC 556)**
Geomorphology of the ocean bottom; properties of sea water, salinity and temperature distributions; major ocean currents and circulations; equations of motion, horizontal wind-driven currents; thermohaline circulations; wind waves and swell.
- ATS 561 Synoptic Meteorology I (3) I**
Examination of weather code, plotting and map analysis. Includes a review of cyclone and frontal theory using case studies to develop diagnostic and forecasting techniques. Practical applications of air mass and frontal analysis are related to weather forecasting. P: ATS 113 or IC.
- ATS 562 Synoptic Meteorology II (3) II**
Detailed examination and use of fax charts, PC McIDAS displays, and other tools employed in analysis and forecasting. Review of methods in short-term, medium and long-range forecasting. P: ATS 561 or IC.
- ATS 564 Statistical Applications in the Atmospheric Sciences (3) 1994**
Study of the statistical distributions of scalars and vectors, sampling theory, regression, correlation, and time series. Applications to statistical forecasting and forecast verification. P: MTH 245.
- ATS 565 Atmospheric Circulation Systems (3) I**
Examination of the general circulation of the atmosphere. Emphasis on seasonal variation in both hemispheres. Exploration of formation of anomalous circulation types with respect to anomalous boundary layer conditions. Detailed discussion of tropical-mid latitude interactions. P: ATS 562 or IC.
- ATS 566 Climate Theory (3) OD**
Theories of global climate and variability. Examination of climate models, including internal and external parameters and feedback mechanisms. P: ATS 113, 561.
- ATS 571 Dynamic Meteorology I (3) I**
Equations of motion and thermodynamics will be vigorously derived and applied to the atmosphere. Topics include thermodynamics of dry and moist air, hydrostatic and hypsometric approximations, geostrophic and gradient wind balance, mass continuity, and vorticity. P: PHY 213; MTH 246.

- ATS 57 Dynamic Meteorology II (3) II**
 Concepts presented in ATS 571 will be further developed and applied to the following topics: barotropic and baroclinic instability, atmospheric oscillations, quasi-geostrophic theory, and simple numerical modeling. P: ATS 571.
- ATS 573 Cloud Physics and Dynamics (3) OD**
 Thermodynamic processes which control the development and growth of clouds. Relationship between atmospheric properties and cloud structure. Distribution of condensation nuclei, water droplet spectra. Initiation and growth of cloud hydrometers. Structure of severe storms, radiative effects of clouds. P: ATS 571.
- ATS 574 Stratospheric Dynamics (3) I, AY**
 Study of the principles governing atmospheric motions in the stratosphere. Includes a brief review of chemical processes, radiative effects, and the resulting thermal structures that govern the mean stratospheric circulation; forcing mechanisms and conditions for wave generation in the stratosphere; discussions of sudden warmings, quasi-biennial and semiannual oscillations, and tropical wave phenomena in the stratosphere. P: ATS 571.
- ATS 615 Radar and Severe Storms (3) II, AY**
 Examination of the fundamentals of weather radars (coherent and noncoherent) and their application to detecting severe storms. Topics include properties of electromagnetic waves; radar detection of spherical particles; use of radar for quantitative measurement of precipitation; radar beam characteristics; the use of radar in mesometeorology; the study of severe storms; Doppler weather radar; theory and recent developments applied to severe storm detection and warning. P: ATS 545 or IC.
- ATS 624 Advanced Dynamics I (3) OD**
 Detailed examination of the fundamental physical processes occurring in the atmosphere through the use of thermodynamic and hydrodynamic equations. Subjects treated include geophysical and fluid mechanics, geostrophic adjustment, nongeostrophic baroclinic instability, energetics, and equatorial general circulation. P: ATS 572 or equiv.
- ATS 625 Advanced Dynamic Meteorology II (3) OD**
 Continuation of ATS 624. P: ATS 624.
- ATS 626 General Circulation (3) I, 1994-95**
 The course will apply the fundamental principles of dynamic meteorology and energetics of the atmosphere to explain the major features of the observed general circulation. Explores tropical mid-latitude interactions and anomalous circulation types. P: ATS 571 or equiv.
- ATS 631 Numerical Weather Prediction (3) I 1994-95**
 Descriptive and mathematical foundations for numerical weather prediction. History of numerical weather prediction, analysis and initialization methods, the governing equations and analytic solutions to simplified forms of these equations, finite differentiating techniques and problems in numerical weather prediction. P: ATS 572.
- ATS 632 Advanced Numerical Weather Analysis and Prediction (3) OD**
 Theory of analysis techniques such as spectral analysis and optimal interpolation; conventional gridpoint, spectral, and fine-element models; map projections; the principle of statistical correction to model forecasts and stochastic-dynamic prediction. Practical experience in numerical forecasting is obtained through a project in which a numerical model is developed and numerical methods are applied. P: ATS 631 or equivalent.
- ATS 643 Radiation Through the Atmosphere (3) S**
 Introduction to the physical processes of radiation and the theory of radiative transfer through the atmosphere, including definitions, basic radiation laws, absorption, emission, and scattering processes; the radiative transfer equation; and simple solutions. Applied to visible, infrared and microwave radiation, with special emphasis on providing the background necessary for understanding theory and techniques of remote sensing. P: Two semester of calculus.
- ATS 644 Remote Sensing Theory (3) OD**
 Provides theoretical background for further work in remote sensing of the earth and atmosphere. Topics include electromagnetic theory; Maxwell's equations; the absorptive and emissive properties of the earth-atmosphere system; the scattering properties of the atmosphere, including Mie scattering, calculations of forward radiative transfer and inversion of radiation measurements. P: Two semesters of calculus.
- ATS 646 Current Topics in Remote Sensing (3) OD**
 Advanced course in remote sensing, including the latest work in atmospheric temperature and constituent analysis and in terrestrial and oceanographic sensing.

- ATS 647 Solar-Terrestrial Relationships (3) OD**
Basic features of solar activity, the solar wind, and effects of the sun on the earth beginning with an overview of stellar evolution. Class lectures will trace the processes as solar energy is transported into space and the earth's atmosphere. Includes introductory solar physics, magnetospheric dynamics, and thermospheric and ionospheric processes.
- ATS 652 Atmospheric Boundary Layers and Turbulence (3) OD**
The conservation equations of heat, moisture, mass, and momentum for the lowest two kilometers of the earth's atmosphere are expanded into mean and turbulent components and scaled to the boundary layer. Closure approximations and the statistical nature of turbulence are discussed. Observations of turbulent boundary layers are reviewed and compared with theoretical predictions. Similarity models are applied to the surface layer and parametric models are applied to the mixed layer.
- ATS 663 Weather Systems Analysis (3) II**
Application of fundamental analysis and diagnostic strategies to weather systems. Topics include meteorological data sources and errors, scalar analysis, cross-section and isentropic analysis, surface and upper air analysis, kinematic analysis, deformation and frontogenesis, quasi-geostrophic and isentropic potential vorticity diagnostics. Case studies of major weather systems are employed to demonstrate various analysis strategies and to synthesize a coherent picture of weather system structure and the processes that create that structure. Emphasis on computer assisted analysis and diagnosis. P: ATS 571 or IC.
- ATS 666 Climate Theory (3) OD**
Theories of global climate and climate variability. Climate models (including internal and external parameters) and feedback mechanisms will be developed and examined. P: ATS 561 and 562 or equiv.
- ATS 670 Current Topics in Atmospheric Sciences (3) I, II, OD**
Examination of topics of current interest in the atmospheric sciences. Course may include but not be limited to such areas as aeronomy, weather modification, interactive computer graphics, synoptic-scale forecasting and analysis, meso- and micro-scale meteorology, meteorological instrumentation, military applications of the atmospheric sciences; meteorology of other planets, and aerology and atmospheric physics.
- ATS 674 Aeronomy (3) II, OD**
Basic features of the technical disciplines comprising the field of aeronomic studies. Starting with an overview of solar processes and phenomena, class lectures will trace the processes as solar energy is transported into space and into the earth's atmosphere. Includes introductory solar physics, magnetospheric effects, thermospheric and ionospheric processes, and special optical phenomena, e.g., aurora and airglow. Students will be exposed to a wide spectrum of highly specialized technical areas with the intent of directing them into more advanced, specialized, in-depth studies. P: ATS 571.
- ATS 675 Advanced Stratospheric Dynamics (3) I**
Course designed to acquaint the student with the diverse dynamic processes responsible for forming and maintaining the earth's stratosphere. Topics discussed include the radiative and chemical processes responsible for creating the region, periodic changes observed and their significance, and techniques used to measure and observe phenomena in this region. Depending upon the experience levels of the students enrolled, individual specialized exercises may be added to the usual lectures to increase the student's involvement and understanding.
- ATS 793 Directed Independent Readings (1-3) I, II, S**
One or more students will follow a series of readings, as specified by a faculty member, on a single topic or a range of associate topics. This allows students to explore topics not offered in the current courses or to pursue more advanced study in an area covered in a previous course. A maximum of three semester hours may be taken. P: IC.
- ATS 795 Directed Independent Study (1-3) I, II, S**
Advanced study in a specific area of interest to the faculty and students. During the course of their research, students are expected to set up scheduled meetings with their advisers. At the end of his/her study, the student will give an oral presentation which highlights the final study report. P: IC.

ATS 797 Directed Independent Research (3) I, II, S

Each student, supervised by a specific faculty member, pursues in-depth reading and research on a single topic. At the end of the project, the student will make a presentation with the research. A paper of publishable quality and length is to be prepared by the student, to the satisfaction of the research committee. In this manner, the student is introduced to scientific research methods and encouraged in the development of both verbal and written communication skills. P: IC.

ATS 799 Master's Thesis (1-3) I, II, S

Research in connection with the preparation of the Master's thesis. Students must register for this course in any term when engaged in formal preparation of the Master's thesis; however, six credit hours are the maximum applicable toward the degree. P: IC.

BIOCHEMISTRY See Department of Biomedical Sciences

BIOLOGY (BIO)

The graduate program in Biology was discontinued as of 7-1-94.

BIOMEDICAL SCIENCES (BMS)

Biochemistry, Bioorganic Chemistry, Cell and Developmental Biology, Molecular Biology, Neurobiology, Physiology

Professors R. F. Murphy (Chair), Adrian, Andrews, Babin, Bertoni, Conlon, Creek, Dalley, Fritzsich, Gambal, Kimmel, D. Marcus, McGuire, Morley, T. Quinn, Walsh, Warr and Yee; *Associate Professors* Agrawal, Anderson, Bergren, A. K. Bewtra, Brauer, Bruce, Carusi, Fishkin, Hodgson, Jeffries, Neary, Nichols, Reidelberger, Rendell, D. D. Smith; *Assistant Professors* Cosgrove, Gale, Knezetic, Lovas, Mackin, McGee, Palmer, Patterson, Petzel, Pisarri, Raab-Cullen, Slentz, Vogel, Vollberg, and Wangemann; *Adjunct Associate Professor* Crapon de Caprona

Program and Objectives

Master of Science (M.S.) and Doctor of Philosophy (Ph.D.)

The Department of Biomedical Sciences offers a program of study culminating in the Ph.D. degree. Completion of this program prepares the individual for a career in university research institutes or industry.

The program is flexible and designed to meet the career interests of each student. The department offers a diverse range of areas of study and encourages an interdisciplinary approach. Instruction and research experience is geared toward integration of structure and function, from cells to the organismic level. Emphasis is given to placing students in research laboratories in the first semester. Some examples of the wide variety of research specialties of the faculty are design and chemical synthesis of analogues of regulatory peptides; the role of peptides in the regulation of gastrointestinal and cardiovascular functions and of bone growth in the promotion of cancer; the molecular evolution of peptide hormones; the structure, expression, and implementation of mobile genetic elements as vectors for gene therapy and transgenic gene delivery; the molecular biology of collagen synthesis; regulation of gene expression; the cellular and genetic basis for differentiation of the brain and cardiovascular system; comparative neuroanatomy; respiratory mechanics and control; host-parasite interactions; and environmental physiology. In addition, the department encourages student interactions with the faculty in the Departments of Biology, Pharmacology, Medicine and Surgery, the Center for Hard Tissue Research, the Boys Town National Research Hospital, and the Veteran's Administration Hospital.

Prerequisites for Admission

1. A bachelor's degree or equivalent, preferably with satisfactory completion of course work in a biological, chemical or physical science.
2. A GPA of 3.0 overall.
3. GRE scores in the 50th percentile for the quantitative and verbal parts of the examination.
4. The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by a score of 550 in the TOEFL (Test of English as a Foreign Language) examination.

General Requirements

The general requirements of the Graduate School listed under Administration and Policies Governing Graduate Study are met.

The student will select an adviser. The student and his/her adviser will formulate a plan of study which will be presented to an Advisory Committee formed by the student and supervisor. The Advisory Committee will assist the student during the entire program.

Courses can be selected from the list below or from related subjects, according to the individual needs of the student.

Doctoral students may be given the opportunity to participate in the teaching activities of the Department. Neither the M.S. nor the Ph.D. degree will be conferred upon any student with an overall QPA of less than 3.0.

Comprehensive Examinations

Students are required to pass comprehensive examinations according to the guidelines of the Graduate School.

Thesis/Dissertation

M.S. and Ph.D. candidates must present and defend a thesis or dissertation. The defense of the Ph.D. dissertation is open to the faculty but only the examining committee may question the candidate. Copies of the thesis or dissertation are to be presented to committee members and the Graduate Dean at least 30 days prior to the defense.

BMS 521 Principles of Biochemistry (4) II

Fundamental principles of structural biochemistry, enzymology, metabolism and molecular biology. P: CHM 323 & 324 (organic) or equiv.; Sr. or Gr. stdg.; Jr. stdg. only with IC. This course is offered in spring semesters only.

BMS 540 Nutrition Facts and Fads (2) I

A nutrition course designed for people with health care interests emphasizing proper nutrition, omnivorous diets, and basic food science concepts. The inadequacies of food faddism and identification of bogus claims and "quackery" will also be considered. P: Advanced BIO course or a BMS course or IC.

BMS 541 Comparative Vertebrate Neuroanatomy (4) OD

Study of the evolution of the vertebrate central nervous system, including historical and philosophical background, characteristics and trends within major radiations, and unsolved problems. 2R, 4L. P: IC.

BMS 545 Dental Physiology (5) I

Lectures and laboratory exercises in human physiology. 5R. P: Dental Dean's consent.

BMS 550 Cardiopulmonary Physiology (2) I

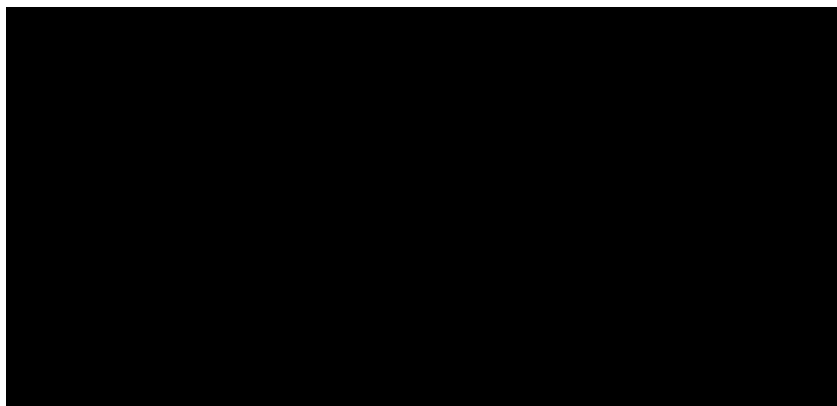
Application of basic principles in cardiovascular and respiratory physiology to examining adaptive mechanisms in the oxygen transport system. P: IC.

- BMS 600 Biochemistry (8) I**
Comprehensive study of biochemical concepts with special emphasis on man. Topics include the structure and function of proteins, nucleic acids, enzymes, vitamins, lipids, steroids and carbohydrates in biological systems and molecular biology. 6R, 10D arr. P: DC.
- BMS 601 Physiology (8) II**
Mammalian and human physiology. 8R. 10D. P: Gr. stdg.; background in chemistry, biology, and physics.
- BMS 602 Human Gross Anatomy (7) I**
Detailed structure of the human body. Dissection of the cadaver combined with conferences, lectures, and assigned readings. 4R, 9L. P: Gr. stdg. or IC.
- BMS 603 Cell Biology (4) I**
Detailed consideration of the functional aspects of cell biology, with an emphasis on eukaryotic cells. Topics include signal transduction, neuronal cell biology, synthesis, transport and processing of secretory proteins, extracellular matrix proteins, cell adhesion, cytoskeleton. P: IC.
- BMS 604 Molecular Biology (4) II**
Detailed consideration of the structure, function and synthesis of DNA, RNA and proteins, focusing on the eukaryotic cell. Topics include DNA structures, transcription, translation, replication, recombinant DNA technology eukaryotic viruses and in the control of cellular differentiation in normal and pathophysiology states such as cancer. Emphasis will be given to the most current advances. P: IC.
- BMS 605 Molecular Endocrinology (3) I, 1995-96, AY**
Study of the function of endocrine glands at the organismal, cellular and molecular level. 3C & D. P: BMS 601 or equiv. or IC.
- BMS 606 Proteins: Structure-Function Relationships (4) II**
Topics covered include primary structure, principles of secondary and tertiary structures, enzyme kinetics, chemical modifications and their effects, protein-protein interactions, protein complementation and prediction of conformation. Presentation and model building by students are integral parts of this course. 4R. P: BMS 521 or 600 or equiv.
- BMS 607 Enzymes (4) I 1995-96, AY**
Classification and properties of enzymes, kinetics, activators and inhibitors. Study of selected enzymes to demonstrate general principles. 3R. P: BMS 521 or 600 or equiv. and BMS 606.
- BMS 608 Peptide Chemistry (4) I**
A detailed study of the theoretical and practical aspects of peptide synthesis, isolation, purification and structure. P: IC and BMS 521 or BMS 600 or equiv.
- BMS 609 Biochemistry of Lipids (4) II, AY**
Systematic study of the structure and function of lipids and steroids in biological systems. Topics include identification, biosynthesis and function of lipids in membrane structure, as metabolic fuel and as regulators of metabolism. 3R. P: BMS 521 or 600.
- BMS 610 The Carbohydrates (3) I**
Structure, function and metabolism of carbohydrate-containing macromolecules. P: IC.
- BMS 611 Advanced Respiratory Physiology (1-3) I, OD**
Studies in selected topics in respiratory physiology. P: BMS 601; IC.
- BMS 612 Readings in Respiratory Physiology (1) I, OD**
Directed readings in respiratory physiology. P: IC.
- BMS 613 Neurobiology I (4) OD**
Introductory course covering classical neuroanatomy and neurophysiology. P: IC.
- BMS 614 Neurobiology II (4) OD**
Contemporary neurobiology including discussions of molecular neurobiology. P: IC.
- BMS 615 Regulation of Gastrointestinal Function (3) I, OD**
Endocrine and neural control of gastrointestinal functions including secretion, motility and absorption with particular emphasis on the role of recently discovered regulatory peptides. P: IC.

- BMS 616 Methods in Gastrointestinal Organ and Cellular Physiology** (3) I, II, OD
Methods in research of gastrointestinal function using acutely isolated cell systems (such as parietal cells, isolated gastric glands, dispersed pancreatic acini and isolated islets) and isolated, vascularly perfused organs. P: IC.
- BMS 617 Muscle Physiology and Biophysics** (3) II, OD
Mechanics, energetics, biochemistry, ultrastructure, and function of striated muscle. Comparative physiology of cardiac and smooth muscle, and of vertebrate and invertebrate contractile systems. 3 C & D. P: BMS 601; IC.
- BMS 618 Seminar in Environmental Physiology** (1) II, OD
Seminars dealing with daily rhythms and seasonal cycles in wild populations of mammals. P: IC.
- BMS 619 Readings in Renal Physiology** (1) OD
Directed readings in renal physiology P: IC.
- BMS 620 Methods in Renal Physiology** (1) OD
Practical measurements of fluid and ion fluxes and their regulation. P: IC.
- BMS 621 Teaching Practicum in Gross Anatomy** (1-3) I
Practical experience in teaching human gross anatomy. Students will assist in BMS 602. 3-9L. P: BMS 602 and IC.
- BMS 622 Functional Histology** (4) II
Histology emphasizing the interrelation of structure and function as revealed by light and electron microscopy. 2R, 4L. P: Gr. stdg. or IC.
- BMS 623 Teaching Practicum in Histology** (3) II
Practical experience in teaching human histology. Students will assist in BMS 622. 8L. P: BMS 622 and IC.
- BMS 624 Human Neuroanatomy** (4) II
Examination of the fundamental structure and function of the human central nervous system. 2-3R, 4L. P: Gr. stdg. or IC.
- BMS 625 Teaching Practicum in Neuroanatomy** (3) II
Practical experience in teaching human neuroanatomy. Students will assist in BMS 624. 8L. P: BMS 624 and IC.
- BMS 626 Human Embryology** (2) I
Normal and abnormal descriptive anatomy of the embryo, fetus, and fetal membranes. 2R. P: IC.
- BMS 627 Cytochemistry and Histochemistry** (2-4) OD
Theory and applications of basic cytochemical and histochemical techniques. Students will be required to identify a problem involving the application of light or electron microscopic histochemical and cytochemical techniques for its solution. 2-6 D & L. P: IC.
- BMS 628 Electron Microscopy** (2-5) OD
Theory and practice of transmission/scanning electron microscopy with interpretation of fine structure. 3-6 D & L. P: IC.
- BMS 629 Anatomical Methods** (2) OD
Exploration of techniques commonly used in research. 2-4 D & L. P: IC.
- BMS 630 Hearing** (4) OD
Introduction to auditory science. P: IC.
- BMS 631 Auditory Physiology I: The Periphery** (4) OD
An advanced graduate level course focusing on the anatomy and physiology of the external, middle and inner ears. P: IC.
- BMS 632 Auditory Physiology II: Central Pathways** (4) OD
An advanced graduate level course focusing on the anatomy and physiology of the central auditory system. P: IC.
- BMS 633 Signals and Systems in Auditory Science** (2) OD
A consideration of fundamental technical aspects of tools commonly used in auditory research P: IC.

- BMS 634 Regulation of Renal Physiology (3) OD**
The regulation of renal function; the control of renal hemodynamics and tubular transport. The roles of extracellular and intracellular messengers. Analysis of the effects of three membrane bound enzyme second messengers systems including adenylate cyclase, phospholipases A₂ and C with respect to renal fluid and electrolyte balance. P: IC.
- BMS 720 Molecular Modeling of Peptides (3) I**
P: IC.
- BMS 721 Advanced Gastrointestinal Physiology (1) I**
Detailed analysis of the physiology of the gastrointestinal tract. This course will be meet one hour per week over a three-year period covering six semesters. P: Gr. stdg.; IC.
- BMS 790 Research Methods (3-5) I, II**
Methods and techniques used in on-going research projects. 3-5L. P: IC.
- BMS 791 Seminar (2) I, II**
Informal oral presentations and critical discussions of assigned subjects to familiarize students with the nature and extent of research literature, the analysis of research papers, and the collation and presentation of scientific information. P: DC.
- BMS 792 Research Topics (2) I, II**
Directed independent study involving readings and presentations of current physiological literature, followed by group discussion involving students and faculty members.
- BMS 795 Directed Independent Study (2) I, II, S**
Each student, supervised by faculty members, will pursue in-depth reading and discussions on current research topics of interest to faculty and students. The purpose is to provide an environment whereby the student is introduced to scientific research methods and can improve critical thinking and reading skills as well as exchanging scientific information.
- BMS 797 Directed Independent Research (3-6) I, II, S**
Original investigation under supervision and guidance of individual staff members. Laboratory and conferences. P: IC.
- BMS 799 Master's Thesis (1-3) I, II, S**
Review of the literature and research data; writing of the thesis. Students must register for this course in any term when engaged in formal preparation of the Master's thesis; however, six credit hours are the maximum applicable toward the degree. P: IC.
- BMS 899 Doctoral Dissertation (3-6) I, II, S**
Review of the literature and research data; writing of the dissertation. Students must register for this course in any term when engaged in formal preparation of the doctoral dissertation; however, twenty credit hours are the maximum applicable toward the degree. P: IC

BIOORGANIC CHEMISTRY
See Department of Biomedical Sciences



BUSINESS ADMINISTRATION (MBA)

Associate Professor D. Wells (Acting Director of Graduate Business Programs); Professors Allen, Banville, W. Brannen, Gleason, Goss, Johnson, Krogstad, Nitsch, Phillips, Raval, L. Redinbaugh, Schminke, and Schweig; Associate Professors K. Brannen, Chien, Dean, Ellison, Fitzsimmons, Flinn, Gasper, Hoh, Hutchens, Lewis, Marble, Murthy, Purcell, Sherman, Shimerda, and Stockhausen; Assistant Professors Karuppan, Kracher, Mallenby, and McNary.

Program and Objectives

Master of Business Administration (M.B.A.) Program

Graduate study in business administration is an integral part of education for managers. To cope with specialization in our economy, a high degree of administrative knowledge and competence is essential for success in the business world. Furthermore, organizations have an increasingly close relation to the welfare of the community, requiring managers to be effective, creative and professional leaders.

The M.B.A. program at Creighton University is an evening program which educates qualified men and women in the development of knowledge, abilities, and attitudes that will constitute a foundation for their growth as effective and creative leaders in business, government, and institutions. Effective decision-making in management is stressed rather than advanced study in a single area of concentration.

Prerequisites for Admission

Enrollment in the M.B.A. Program is open to any qualified person who meets the following requirements: a baccalaureate degree from an accredited institute of higher education, regardless of the undergraduate field of study; evidence of high scholastic ability at the undergraduate level; an acceptable score on the Graduate Management Admission Test (GMAT).

A minimum GMAT score of 450 is required of all students. Under certain conditions, individuals whose score is slightly below 450 may be admitted on the condition that the test be retaken and a minimum score of 450 achieved. Under no circumstances is the student allowed to register for more than 6 credit hours without achieving a minimum score of 450.

Applications for admission to the M.B.A. Program should be sent to the Coordinator of Graduate Business Programs in the College of Business Administration. The application must include the following: completed application form and application fee; one official transcript from each college or university attended to be sent directly by the college or university to the Coordinator of Graduate Business Programs; official score report of the Graduate Management Admission Test, and three completed recommendation forms. The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by achieving a score of 550 in the Test of English as a Foreign Language (TOEFL) examination.

Applicants are responsible for arranging to take the GMAT and TOEFL and for requesting the registrar of each college or university to mail one official transcript to the Coordinator of Graduate Business Programs.

General Requirements

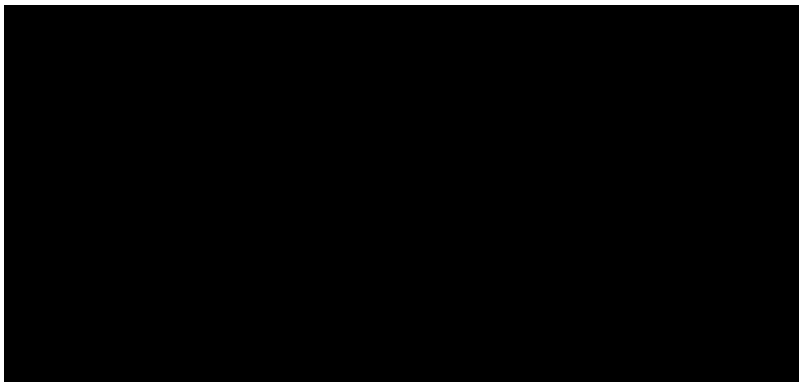
The Master of Business Administration program consists of thirty-three semester hours of graduate credit beyond the MBA Foundation Courses. Courses in the program are taken as follows:

- I. Ethics Component: MBA 773 Business and Society (3 hours - must be taken in first 6 hours of study)
- II. Core Component (18 hours; 15 hours if any one course is waived with Dean's permission):
 - MBA 701 Accounting Applications for Managerial Decision Making
 - MBA 711 Financial Management and Business Strategy
 - MBA 741 Managerial Economics
 - MBA 761 Marketing Management
 - MBA 771 Organizational Behavior
 - MBA 731 Systems Theory, Analysis and Design
- III. Elective Component: (9 hours; 12 hours if any one core course is waived)
- IV. Policy Component: MBA 775 Business Policy and Managerial Action (3 hours - must be taken in last 6 hours of study)

The MBA program will, therefore, assure sufficient breadth of exposure across all the functional areas of administration appropriate for the Master's level. It is also possible to obtain reasonable depth in a given area by taking the electives in the same area. Thus, it is possible for a student to complete four courses in a given area and still receive the broader view of administration afforded through the other core courses. In certain instances one core course can be waived by the Director of Graduate Business Programs if a student has sufficient academic background in a discipline. When this requirement is waived, the student would then have four electives instead of three. Decisions on waiving core requirements will be made on an individual basis by the Coordinator of Graduate Business Programs in consultation with the student and department chair.

Special Requirements

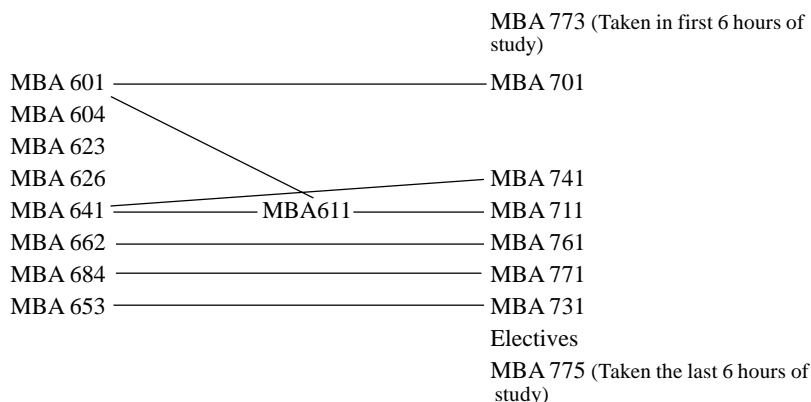
Deficiencies in the foundation area for graduate study in business administration must be removed before students will be allowed to enroll in associated graduate-level courses. These deficiencies may be removed by undergraduate courses or M.B.A. foundation courses. Enrollment in the M.B.A. foundation courses is limited to students who have been admitted to the M.B.A. Program. Concurrent enrollment in graduate-level courses and foundation courses is permitted provided the necessary prerequisites have been met for the graduate-level courses.



Overview: Master of Business Administration Program

Required Foundation Courses

Required Core Courses



Elective Course Selections (1-3 Sem. Hrs.)

- MBA 715 — Investment Value and Theory
- MBA 717 — Accounting Seminar
- MBA 719 — Finance Seminar
- MBA 721 — Decision Theory and Methodology
- MBA 725 — Computer Simulation of Systems
- MBA 739 — Tax Theory and Business Decisions
- MBA 751 — Economic Fluctuations and Forecasting
- MBA 759 — Seminar in Applied Economics
- MBA 765 — Marketing Research
- MBA 767 — Marketing Dynamics Seminar
- MBA 770 — International Business Operations
- MBA 772 — Organizational Analysis and Development
- MBA 779 — Seminar in Management
- MBA 795 — Independent Study and Research

M.B.A. Foundation Courses

(Open only to students enrolled in the M.B.A. and M.C.S.M. Programs)

Note: Foundation courses are waived in each subject area for students who have satisfactorily completed equivalent courses prior to admission to the M.B.A. Program. Acceptable undergraduate equivalents are listed with course descriptions.

MBA 601 Fundamentals of Accounting (3) I

Foundation course fostering an understanding of accounting and the way it serves in developing useful information about economic organizations. Acceptable undergraduate equivalent: ACC 201 & ACC 202.

MBA 604 Legal Environment of Business (2) S

Law as one of the dynamics of our society and the impact on managerial action. The origins of law; the development of the English Common Law-American Constitutional System; and the organization, operation, and termination of a business within the framework of this legal system with emphasis on laws affecting business policy. Acceptable undergraduate equivalent: BUS 201.

- MBA 611 Business Financial Management (3) II**
Analysis of the sources and uses of funds available to business concerns, especially corporations; financial analysis, budgeting, and financial planning and control; financial aspects of circulating and fixed asset management. P: ACC 202 or MBA 601 & ECO 203 & ECO 205 or MBA 641. Acceptable undergraduate equivalent: FIN 301.
- MBA 623 Operation Analysis (3) II, S**
Quantitative approaches to the solution of business problems. Current concepts of quantitative analysis, production, and operations analysis for business decisions are emphasized. P: MBA 626 or BUS 229 & MTH 141 or MTH 245. Acceptable undergraduate equivalent: BUS 371.
- MBA 626 Mathematical and Statistical Analysis (4) I**
Introduces students to applications of differential and integral calculus, linear programming, probability theory and regression analysis. P: MTH 135 or equivalent. Acceptable undergraduate equivalent: MTH 141 or MTH 245; and BUS 229.
- MBA 641 Micro- and Macroeconomic Analysis (3) I**
Major micro- and macroeconomic principles and analysis of major economic problems and policies. Acceptable undergraduate equivalent: ECO 203 & ECO 205.
- MBA 653 Principles of Information Systems (2) S**
Course presents an introduction to the fundamental concepts and issues relevant to the successful development, management, and use of organizational information systems. It includes an overview of current and emerging information systems technologies, and coverage of the support commonly offered by information systems for operations, transaction processing, tactical management, and strategic decision making. Emphasis on areas that reflect the future directions of the field, with discussion of such topics as artificial intelligence, telecommunications and networking, CASE tools, and end-user computing. Acceptable undergraduate equivalent: MIS 353.
- MBA 662 Fundamentals of Marketing (2) S**
Managerial approach to the study of problems of marketing with emphasis on marketing strategy and development of a marketing mix. P: ECO 203 or MBA 641. Acceptable undergraduate equivalent: MKT 319.
- MBA 684 Fundamentals of Management (2) S**
Evolving study of concepts, theory, research, and operational problems of management. Examination of necessary factors and relationships to establish and achieve organizational objectives: goals, policies, procedures; the planning process; control systems; organizational structure and behavior; leadership. Acceptable undergraduate equivalent: MGT 301.

M.B.A. 700-Level Courses

(Open only to students enrolled in the M.B.A. and M.C.S.M. Programs who have completed the necessary Foundation Courses)

- MBA 701 Accounting Applications for Managerial Decision Making (3) I, II, S**
Advanced study of auditing, financial accounting, managerial accounting, Federal income tax, and financial reporting topics which managers need to perform effectively in various types of organizations. Emphasis on broad application of concepts rather than technical skill development. P: MBA 601 or equiv.
- MBA 711 Financial Management and Business Strategy (3) I, II, S**
Analysis and case study of the significant areas of financial planning and control, working capital and fixed asset management, and the identification and acquisition of funds in the money and capital markets; employment of financial techniques as aids in decision-making relative to balancing the liquidity-profitability objectives of a business firm. P: MBA 611 or equiv.
- MBA 715 Investment Value and Theory (3) I, II**
Study of advanced topics in investments, capital markets, and portfolio theory. Special emphasis on security analysis and valuation, as well as on the theory of efficient markets. P: MBA 611 or equiv.
- MBA 717 Accounting Seminar (1 or 3) II**
Study of advanced topics in accounting. Focus on the analytical and empirical literature in the field of accounting. Course content necessarily changes each semester; therefore, flexibility is provided by the seminar approach. P: MBA 601 or equiv.

- MBA 719 Finance Seminar** (1 or 3)
Study of advanced topics in business finance. Focus on the analytical and empirical literature in the field of finance. Course content necessarily changes each semester; therefore, flexibility is provided by the seminar approach. P: MBA 611 or equiv.
- MBA 721 Decision Theory and Methodology** (3) OD
Identification, analysis, and application of decision theories, models, and quantitative methods utilized in operations research, management science, and system analysis. P: MBA 623 or equiv.; MTH 141 or equiv.
- MBA 725 Computer Simulation of Systems** (3) OD
Design and simulation of subsystems. Employs computer modeling to illustrate systems theory and to develop subsystems for such areas as inventories, queues, planning/forecasting/prediction. P: MBA 623 or equiv.; MTH 141 or equiv.
- MBA 731 Systems Theory, Analysis and Design** (3) I, II, S
Theories, principles and methods applicable to the analysis, design, and management of information systems. Emphasis is upon the determination of information requirements, algorithmic and dynamic processing method, appropriate file structures for the database(s), and retrieval and reporting format and timing for the several functional/organizational units of a firm.
- MBA 739 Tax Theory and Business Decisions** (3) I
Effects of taxation on business organization, capital structure, policies and operation. Deals with those phases of taxation that are general executive responsibilities. P: MBA 601 or equiv.
- MBA 741 Managerial Economics** (3) I, II, S
Analysis of economic information and techniques necessary and useful in business decision-making, including adaptations of economic concepts, principles, and research methods to the requirements of business managers. P: MBA 625, MBA 641 or equiv.
- MBA 751 Economic Fluctuations and Forecasting** (3) II
Analyzing and forecasting fluctuations in natural income, employment, and prices; impact of economic changes on business management; application of economic analysis to the problems of interpreting and forecasting of individual firm, industry, and general business conditions. P: MBA 625, MBA 641 or equiv.
- MBA 759 Seminar in Applied Economics** (1 or 3) S
Application of economic theory and analysis to selected problems and issues of local, regional, national, and international concern as these relate to business activity and the making of administrative decisions. P: MBA 641 or equiv.
- MBA 761 Marketing Management** (3) I, II, S
Analysis and case studies are used in the managerial approach to marketing. Discussion of the marketing elements of product, place, price, and promotion within a problem-solving framework for the planning, implementation, and control of alternative marketing strategies. P: MBA 662 or equiv.
- MBA 765 Marketing Research** (3) I
Study of the application, evaluation, and efficient use of techniques for the systematic gathering, recording, and analyzing of data about problems relating to the marketing of goods and services. P: MBA 625, MBA 662 or equiv.
- MBA 767 Marketing Dynamics Seminar** (1 or 3) II
Marketing theory is briefly reviewed to provide background for intensive analysis of current and sometimes controversial marketing issues. Course content necessarily changes each semester; therefore, flexibility is provided by the seminar approach. P: MBA 661 or equiv.
- MBA 770 International Business Operations** (3) I, S
Understanding the development of the international business world and the international business environment. Management of business operations across national boundaries and control of the international flow of money, personnel, information, goods, and services.
- MBA 771 Organizational Behavior** (3) I, II, S
Exploration of administrative activity in organically adaptive social systems. Focuses on the problems of formal and informal organization, communications, participation, motivation, change, conflict, and cooperation. Problems of influence and authority are handled by behavioral and collaborative models. Organization is investigated as a complex of tasks, structures, tools and people in states of continuous change. P: MBA 684 or equiv.

- MBA 772 Organizational Analysis and Development (3) II**
Survey of theoretical and methodological issues in the study of organization structure, process, and behavior. Application of these theories to the administrative decisions of organizational structuring, coordination, control, job design, and leadership. P: MBA 684 or equiv.
- MBA 773 Business and Society (3) I, II, S**
The world of business is viewed as the arena in which all systems of thought, values, and behavior converge. Structure and function are examined in contexts of operational, directional, and constitutional goals. Students are challenged to order these complexities into a moral frame of reference that will provide both individual and organizational guidance while contributing to social justice.
- MBA 775 Business Policy and Managerial Action (3) I, II, S**
Emphasis on the development of knowledge, attitudes, and skills required in the performance of general management. Integration of the functional areas of business through the case method. Design organizational resources with environmental opportunities. P: Final semester enrollment in the MBA Program.
- MBA 779 Seminar in Management (1-3)**
Exploration and analysis of selected problems and issues in today's business environment. Course content necessarily changes each semester as current and sometimes controversial issues within are discussed. P: MBA 684 or equiv.
- MBA 795 Independent Study and Research (1-3) I, II, S**
Advanced study and research in subjects not ordinarily covered by regularly scheduled courses. P: Approval of Coordinator of Graduate Business Programs.

CELL AND DEVELOPMENTAL BIOLOGY

See Department of Biomedical Sciences

CHEMISTRY (CHM)

Professor Mattson (Chair); Associate Professors Harris, Hulce, Klein, Michels, Snipp, and Zebolsky; Assistant Professors Anderson, Dobberpuhl, Griffith, Gross and Kearley

Chemistry is not offered as a graduate major. However, the following Chemistry courses may, with the approval of the major adviser, be included as specified in certain graduate degree programs offered by other departments.

- CHM 501 Inorganic Chemistry I (4) I**
Relation of atomic and molecular structure to chemical and physical properties. Periodicity and descriptive chemistry of inorganic classes and groups. Topics covered include group theory, MO theory, molecular and ionic structures, redox reactions, acid/base theories, and coordination compounds. Laboratory (3 hours weekly); descriptive inorganic chemistry. P: CHM 331.
- CHM 502 Inorganic Chemistry II (3) II**
Additional topics in inorganic chemistry. Emphasis on organometallic chemistry of transition metals, molecular binding, synthesis and chemical reactivities of inorganic and organometallic compounds. P: CHM 501.
- CHM 506 Environmental Chemistry and Natural Resources (3) II**
The nature, identification, and quantitative determination of air and water pollutants. Study of natural resources and energy production. Topics covered include the atmosphere, ozone, the troposphere, natural water, acid rain, drinking water, metals, organochlorine compounds and waste management. P: CHM 208 or DC.
- CHM 521 Synthetic Organic Methods (3) II**
A contemporary survey of the analysis, design, and execution of new methods and innovative total synthesis in organic chemistry. Approaches and techniques for critical reading, discussion, and application of the literature of organic chemistry will be introduced and developed. P: CHM 323.

- CHM 523 Bioorganic Chemistry (3) II**
A survey of current topics at the boundary between organic chemistry and biology, with emphasis on the role of organic reactions in biological systems. The current chemical literature will serve as source material for study and discussion. P: CHM 323.
- CHM 524 Advanced Techniques in Organic Chemistry (3) II**
Advanced techniques in organic and inorganic chemistry with emphasis on synthetic methods. Introduction to the literature of chemistry. Development of skills in information-finding through manual and computer-assisted searches. 1R, 6L. P: CHM 323 & 324.
- CHM 525 Organic Spectroscopic Analysis (3) I**
A study of infrared, nuclear magnetic resonance (^{13}C and ^1H), ultraviolet, and mass spectrometry. The principles of spectrometry are treated along with principles of operation of each technique and the use of each method in the elucidation of molecular structure. P: CHM 323.
- CHM 532 Mathematical Concepts in Chemistry (3) I**
Applications utilizing statistics, mathematical operators, vectors, determinants, group theory, series expansions, and basic differential equations in the modeling of chemical systems. P: MTH 246.
- CHM 533 Computer Applications in Chemistry (3) II**
Exploration of numerical methods helpful in the use of the computer for problem solving in chemistry. Students will write their own programs from the very beginning in the language of their choice — BASIC, FORTRAN or PASCAL. P: CHM 332.
- CHM 540 Seminar in Chemistry for High School Teachers I (1) I, II**
A two-semester course offered in conjunction with the ongoing area chemistry teachers' meetings on Saturday mornings. Topics of interest to high school chemistry teachers are shared. Demonstrations form the basis of most meetings.
- CHM 541 Seminar in Chemistry for High School Teachers II (1) I, II**
Continuation of CHM 540.
- CHM 546 Use of Demonstrations in the Teaching of Chemistry I (2-3) S**
Workshop concentrating on the use of demonstrations, activities, and other new ideas for use by the teacher in the presentation of chemical principles in the classroom. Workshop is primarily laboratory oriented. The theory behind each activity will be thoroughly discussed along with appropriate safety precautions. Participants will be able to take the materials presented with them and use these new materials directly in their own classes. P: High school teachers.
- CHM 547 Use of Demonstrations in the Teaching of Chemistry II (2-3) S**
Continuation of CHM 546. Workshop concentrating on the use of demonstrations, activities, and other new ideas for use by the teacher in the presentation of chemical principles in the classroom. Focus on demonstrations related to advanced topics including kinetics, catalysts, reaction mechanisms, equilibrium, entropy, redox and electrochemistry, organic chemistry, transition metals, fire, nonmetals and polymers. Discussion of pedagogical aspects of each demonstration or activity. Course is team taught.
- CHM 551 Descriptive Inorganic Chemistry (3) S**
A laboratory practicum for high school teachers. A systematic study of the main group elements with an emphasis on chemicals and chemical reactions and processes of importance to society. Includes eleven four-hour sessions consisting of a one-hour lecture/discussion and three-hour laboratory format. Each laboratory session includes 10-15 short experiments or activities. Many of the activities could be utilized at the high school level; however, the purpose of the course is to extend the participant's depth of knowledge of descriptive chemistry by first-hand laboratory experience. P: High school teachers.
- CHM 586 Elementary School Science Demonstrations and Classroom Activities (3) S**
This course offers elementary teachers practical methods for doing science in the classroom. Demonstrations and classroom activities that use a hands-on, interactive approach with students will be presented. The current methodology for interfacing science with language arts will be presented.

CHRISTIAN SPIRITUALITY (CSP)

Administered by University College and Summer Sessions

Professors Hauser (Program Director), Hamm; *Associate Professors* Shanahan (Associate Program Director) and Wright; *Assistant Professor* Mueller.

Program and Objectives

Master of Arts (M.A.) with a major in Christian Spirituality

Creighton's graduate program in Christian Spirituality attempts to combine three elements: (1) a thorough knowledge of Christian Spirituality based on Scripture, theology, and contact with the great masters of the spiritual life; (2) experiential appropriation of the mysteries of the Christian faith through prayer and sacrament; (3) an apostolic orientation directed mainly but not exclusively to preparation for giving spiritual direction and directing retreats. These are not viewed as successive stages or compartments but as a lived synthesis of mind, heart, and mission.

Prerequisites for Admission

Students may enroll either as degree or non-degree students. All applicants (degree and non-degree) should have a minimum of eighteen (18) credit hours in undergraduate theology, and they should share the spiritual goals of the program.

All applicants must also have three letters of reference concerning their life of faith and prayer sent to the program Director, in addition to the usual credentials for admission to the Graduate School.

The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by a score of 550 in the TOEFL (Test of English as a Foreign Language) examination.

Requirements

The degree requires 33 credit hours of course work. The courses are distributed so that one can finish the degree in three summers. Students are encouraged to make a personally directed retreat before and during the first year of the program. Students are required to make a personally directed retreat of more than eight days, under an approved director, during the program. Students may consult University College for information on places offering directed retreats. No thesis is required, but an integrating essay of approximately 25 pages is required at the conclusion of the program.

Required Courses

All degree candidates must take at least one course in each of the following five areas: Foundations (CSP 760 or 761); History (CSP 769 or 770); Prayer (CSP 764, 765 or 766); Discernment (CSP 776); and Catholic Social Teaching or Social Justice (CSP 778 or 779).

Those seeking certification for the ministry of retreat/spiritual direction must take: a course in prayer (CSP 764, 765 or 766); Counseling (CSP 780); the Spiritual Exercises (CSP 773); Discernment (CSP 776); the Pre- and Post-Practicum (781 and 782 are both required). A certificate in spiritual direction and/or retreat giving will be awarded to those who successfully demonstrate the necessary skills in the practical courses and in a satisfactorily supervised practicum.

- CSP 660 Dreamwork: Befriending the Unconscious (1) S**
(785) This course focuses on the psychological theories of dreams, methods of dream analysis, symbology in dreams, dream interpretation, and the spiritual aspect of dreams. Through lectures, videos, personal dream journaling, and group work, the student will be exposed to both the theoretical and practical aspects of dream analysis and interpretation.
- CSP 661 T'ai Chi Chih: Joy through Movement (1) S**
T'ai Chi Chih's body movement meditation releases stress by relaxing the body and refreshing the mind. The twenty simple movements can be done by all regardless of age and physical condition.
- CSP 662 Chi-Kung Moving Meditation: Embodying Spiritual Attentiveness (1) S**
(626) An introduction for Christians to an ancient system of movements developed by Chinese hermits and contemplatives in order to harness and order the body's energies, thereby providing a positive role for the body in spiritual development. This class is also open to students enrolling as auditors.
- CSP 663 Pastoral Approaches to Psychopathologies (1-2) S**
Overview of the more usual sorts of abnormal behaviors likely to be encountered in counseling sessions conducted by pastors and spiritual directors. Diagnosis, treatment techniques, referrals. Emphasis on cases presented by students and on practical modes of intervention. P: CSP 780 or equiv.
- CSP 664 Spirituality of John (1) S**
Course examines themes from writings of John central for spirituality.
- CSP 665 Spirituality of Diocesan Priesthood (1) S**
(731) Reflection on charism and spirituality of diocesan priesthood.
- CSP 676 Giving 19th Annotation Retreats (1-2) S**
(726) How to give retreats to people in everyday life according to Annotation 19 of the Spiritual Exercises of St. Ignatius. P: CSP 773; CO: CSP 781.
- CSP 690 Supervision for Spiritual Directors (1) S**
A workshop for spiritual directors who are interested in acquiring or improving the skills necessary to supervise others in this ministry.
- CSP 760 Scriptural Foundation of Christian Spirituality (3) S**
(701) Introduction to Scripture, especially the New Testament, as the foundation to all Christian Spirituality. Faith, prayer, Holy Spirit, Church, centrality of Christ.
- CSP 761 Liturgical Foundation of Christian Spirituality (3) S**
(703) An exploration of the Church's liturgical prayer life as an important basis and foundation for Christian Spirituality.
- CSP 764 Prayer and Christian Spirituality (3) S**
(710) Using classical and contemporary texts in Christian Spirituality, course studies the theology, methods, stages and dynamics of personal prayer and mysticism.
- CSP 765 Prayer, Intimacy, and True Christian Growth (3) S**
(711) The connection between spiritual and human growth, the necessity of keeping a relationship with Christ, and concrete simple ways of doing it each day.
- CSP 766 Contemplation in the Christian Tradition (3) S**
(712) Course examines approaches to contemplation in classical and contemporary texts. Among authors and texts studied are the following: Pseudo-Dionysius, Cloud of Unknowing, Meister Eckhart, Teresa of Avila, John of the Cross.
- CSP 769 The History of Christian Spirituality (3) S**
(715) Development from post-apostolic age to the present. Some of the classics of Christian Spirituality.
- CSP 770 Called to Holiness: The Christian Vocation (3) S**
(763) Saints, ways to sanctity, past and present. The Communion of Saints. NOTE: This course fulfills the requirement for a course in the history of spirituality.
- CSP 773 The Theology of the Spiritual Exercises of St. Ignatius (3) S**
(725) Theology, interpretations, commentators, structure, with practical applications. Students will draw greater benefit from this course if they have a prior experience of the Spiritual Exercises either in an individually directed silent retreat or an extended retreat in daily life.

- CSP 776 Discernment of Spirits: Theory and Practice (3) S**
(720) Study of the tradition of discernment in the Church with special emphasis on the rules for discernment of spirits in the Spiritual Exercises and the application of these to Christian life and practice.
- CSP 778 Biblical Roots for Peace and Justice Ministry (3) S**
(743) How to use Scripture responsibly in approaching the social and planetary issues of the third millennium. Sample topics: creation and ecology, violence and nonviolence, hunger and stewardship, conscience and civil authority, option for the poor. Opportunity for special issue study.
- CSP 779 Spirituality and Social Concerns (3) S**
(744) Social teachings of the Church on current issues of peace and justice. Integration with prayer and ministry.
- CSP 780 Introduction to Personal Counseling (3) S**
Theory and practice of the dynamics of personal counseling. Analysis of the likenesses and differences between spiritual direction, spiritual counseling, pastoral counseling, and counseling. Helping methods based on Scripture and personality sciences. Practical acquisition of facilitating behaviors of understanding and listening.
- CSP 781 Pre-Practicum in Spiritual Direction and Directed Retreats (3) S**
(783) Preparation for work in spiritual direction and in giving directed retreats. Students must be receiving spiritual direction themselves for at least two years and also have made at least one eight-day directed retreat. P: 12 hrs. CSP courses including CSP 773; CSP 780 or equiv.; and prior arrangement with Coordinator of practica; P or CO: CSP 776.
- CSP 782 Post-Practicum in Spiritual Direction and Directed Retreats (3-4)**
(789) Follows a year of receiving supervision in offering spiritual direction and giving directed retreats. A deepening of knowledge and skills needed to offer spiritual direction and directed retreats. P: CSP 781 and prior arrangement with Coordinator of Practica.
- CSP 783 Spiritual Direction Within The Family System (3) S**
(761) Course focuses on the spiritual aspects of who we are in light of the family we come from. Overview of how one integrates spirituality into one's family life. Topics include: The Implications of Family Stories; A Framework for Working With Family of Origin in Spiritual Direction; Family Loss From Resistance, Death, Anger.
- CSP 784 The Twelve Steps and the Spiritual Exercises of St. Ignatius (3) S**
Course examines the Twelve Steps of Alcoholics Anonymous against the backdrops of the Spiritual Exercises. First half of class is an experience of meeting on one of the steps; second half is reflection on the step in light of the Spiritual Exercises.
- CSP 785 Psychodynamics of Spiritual Growth (3) S (OD)**
(748) Dynamics of psychospiritual growth within the formation of personality development. How the multifaceted integrated developmental process of psychological and spiritual dynamic relates to the personal formative process of the student with practical applications for community and ministry.
- CSP 786 Family Spirituality (3) OD**
(762) Designed for both those who are families and those who minister to families. Key questions: What are the elements of a spirituality derived from within the experience of family? What is the relationship between such a spirituality and the classic traditions of Christian spirituality? How do the family ("the domestic church") and the wider church community serve, enrich and enable each other?
- CSP 787 Feminist/Womanist Theologies for Spirituality (3) S**
(722) A survey of recent feminist theory and its implications for selected topics in Christian theology and spirituality. The focus of theological exploration will be concepts of God; the human person, sin and salvation; and Christology.
- CSP 798 Spirituality for Americans: Thomas Merton's Contemplative Vision (3) OD**
The relevance of Merton for contemporary American spirituality. Merton in context of the American experience: his life, writing and thought as guidelines for living the Gospel today. Special attention to themes of True Self, Contemplation and Non-violence.

- CSP 790 Workshop on Formation (3) S (OD)**
(781) The workshop will focus on principles of spiritual formation, including insights gained from the disciplines of formative spirituality, spirituality and psychology, and the spiritual masters. The workshop will integrate theory about spiritual formation with practical experiences. Participants will present case studies from their own experience as examples. Applications will be made to formation situations of religious, seminarians and laity. The ongoing spiritual formation of the director will be an underlying theme of the workshop.
- CSP 793 Directed Independent Readings (Credit by Arrangement) S (OD)**
To be arranged. P: DC. written instructor consent prior to preregistration.
- CSP 795 Directed Independent Study (Credit by Arrangement) S (OD)**
To be arranged. P: DC. written instructor consent prior to preregistration.
- CSP 797 Directed Independent Research (Credit by Arrangement) S (OD)**
To be arranged.

CLASSICS

Associate Professors Carlson (Chair, Department of Classics/Modern Languages) and Thomas; *Assistant Professors* Bakewell, Habash and Hook; *Adjunct Associate Professor* McGloin.

Greek or Latin are not offered as graduate majors. However, the following courses may, with the approval of the major adviser, be included as specified in certain graduate degree programs offered by various other departments.

Prerequisites for Graduate Study with Greek or Latin as a minor in Plan B Programs

An undergraduate minor or equivalent in Greek or Latin.

GREEK (GRK)

- GRK 501 Greek Orators (3) OD**
Selected speeches of various orators; the historical background; the development of Attic prose.
- GRK 502 Greek Historians (3) II 1996-97**
Selections from Greek historians and a study of their historical methods.
- GRK 523 Plato: Dialogues (3) I 1998-99**
Readings from the Apology, Crito, Phaedo. Development of the dialogue as a literary form.
- GRK 525 Aristotle (3) OD**
Reading of selections from the moral, political, and literary treatises of Aristotle; problems in Aristotelian scholarship.
- GRK 527 The Greek Fathers (3) OD**
Extensive readings from the Apostolic Fathers including selections from St. John Chrysostom.
- GRK 531 Greek Lyric Poetry (3) II 1998-99**
Selections from Greek lyric poetry, including Sappho, Solon, Simonides, Pindar, and Bakchylides; study of lyric dialects and meters.
- GRK 542 Greek Tragedy (3) I 1997-98**
Selections from the Greek tragedians.
- GRK 544 Greek Comedy (3) II 1997-98**
Reading of selected comedies; the origins and characteristics of Greek Old and New Comedy.
- GRK 552 The Iliad of Homer (3) I 1996-97**
Reading and interpretation of selected passages from the Iliad of Homer; study of the Homeric dialect, development of Greek epic, and historical and poetic aspects.

LATIN (LAT)

- LAT 506 The Latin Fathers** (3) OD
Extensive readings from selected authors, including Augustine, Jerome, and Tertullian.
- LAT 509 Medieval Latin** (3) OD
Selected readings from St. Bernard, St. Anselm, St. Thomas, and St. Bonaventure.
- LAT 510 Silver Latin** (3) OD
Study of one genre from Silver Latin (tragedy, epic, history, biography, epigram), and an introduction to the styles and tastes of the period.
- LAT 514 Roman Historians** (3) II 1999-2000
Selections from Roman historians including Sallust, Livy, Tacitus; a study of their historical methods.
- LAT 518 Roman Philosophy** (3) II 1996-97
Selected readings from Lucretius' *De rerum natura*. and/or Cicero's philosophic works; study of Roman philosophic interests, especially Epicureanism and Stoicism.
- LAT 520 Roman Satire** (3) I 1996-97
Readings of selections from the Satires and Epistles of Horace, the Satires of Persius, and the Satires of Juvenal, with discussions on the origins and development of Roman Satire, and the nature and purposes of satire as a genre of literature.
- LAT 524 Latin Lyric** (3) II 1998-99
Study of the Odes of Horace and select poems of Catullus.
- LAT 529 Latin Elegy** (3) OD
Study of the elegiac poems of Catullus, Tibullus, Propertius, and Ovid.
- LAT 534 Latin Oratory** (3) II 1997-98
Selections from Cicero's political and courtroom orations; syntax and method of composition; historical and legal background.
- LAT 538 Latin Epistles and Essays** (3) I 1999-2000
Selections from the Letters and Essays of Cicero and Seneca with emphasis on their philosophical content. A comparison of Golden Age and Silver Age Latin.
- LAT 544 Roman Comedy** (3) I 1998-99
Reading of representative plays of Plautus and Terence; theory of the comic; origins, literary characteristics, and influence of Roman comedy.
- LAT 551 Vergil** (3) I 1997-98
Selections from the Aeneid; study of Vergil's structure, imagery, diction, and meter; reference to the Homeric poems and the contemporary political situation.

COMPUTER SCIENCE (CSC)

Associate Professor Cheng (Chair, Department of Mathematics/Computer Science); *Professor* Mordeson; *Associate Professors* Carlson and Malik; *Assistant Professors* Nair, Peng, and Wierman.

Program and Objectives

Master of Computer Science Program

The graduate program in computer science is designed primarily for students with a bachelor's degree in computer science. The program provides the graduates with a core of common skills and experience in hardware, software, algorithms, languages and data structures while focusing on specialized areas of networking; graphical user interface; information processing and management; and Fuzzy applications. This breadth of general knowledge of the computing field coupled with in-depth substantive knowledge in specialized areas is designed to provide a solid foundation for

immediate job success as well as longer term career objectives. A *Master of Computer Science* (M.C.S.) degree is offered with both a thesis and non-thesis option. Thirty (thesis option) or thirty-three (non-thesis) semester hours of graduate courses in computer science are required. The master's program is oriented toward computer applications in industry and business. It is open to candidates engaged in full-time study and also to candidates employed in industry and business who wish to study on a part-time basis. Students will be allowed freedom to choose their own area of concentration and their adviser.

In order to accommodate students with full-time jobs, the courses making up the program are offered during the evening. Courses are offered frequently enough to allow students to graduate in two years.

Admission Requirements

For entry into the program, a bachelor's degree in computer science is ordinarily expected. Applicants from other disciplines, without any formal education or training in computer science, may also be considered for admission. A combined score of 1,000 on the GRE examination will normally be required for acceptance into the program, as will a grade-point average of 3.0. The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by a score of 550 in the TOEFL (Test of English as a Foreign Language) examination.

Program Requirements

The program has two options: A & B. Option A combines courses and a thesis. Option B combines both course work and a major report. Both options are available to full-time and part-time students.

Students without prior academic education in computer science will normally be required to complete a qualifying program. Students holding a bachelor's degree in computer science or equivalent will normally be admitted directly into the M.C.S. program.

The exact number of courses in the qualifying program is based on the applicant's academic background and will be determined by the director of the Computer Science Program. However, this program normally includes some or all of the following courses: CSC 221, 222, 509, 514, 527, and 536.

The student may take CSC 515, 535, 539 and 555 for graduate credit toward the M.C.S. program; however, only nine credit hours will be transferred to their programs.

- CSC 509 Discrete Structures (3) I** (Same as MTH 509)
Logic; Boolean algebra; switching circuits; graphs; groups; semi-groups; finite state machines; coding theory; grammars; algorithms. P: CSC 221; 6 hrs. college MTH.
- CSC 511 Introduction to Computer Systems (3) II**
Computer structure and machine language; assembly language programming; addressing techniques; macros; program segmentation and linkage. P: CSC 222.
- CSC 514 Introduction to Computer Organization (3) II**
Digital logic design; basic addressing modes; instruction formats and interpretation; I/O devices; memory organization; computer arithmetic; microprogrammed control. P: CSC 511.
- CSC 515 Computer Architecture (3) II**
Components of micro, mini, and mainframe architectures; microprogramming; stack computers; parallel computers; pipeline and vector processing; VLSI and systolic architectures; RISC architecture. P: CSC 514.
- CSC 523 Applied Linear Algebra (3) I** (Same as MTH 523)
Matrix algebra; simultaneous linear equations and determinants; numerical solutions of simultaneous linear equations leading to computer applications and linear programming. P: 6 hrs. college MTH.

- CSC 525 Automata, Computability, and Formal Languages (3) II, A** (Same as MTH 525)
Finite state concepts; acceptors; formal grammars; computability; Turing machines. P: CSC 509.
- CSC 527 Data Structures and Algorithm Analysis (3) II**
Graph algorithms, sorting techniques—internal and external; different types of binary trees; B-trees; static and dynamic tables. P: CSC 222, 509.
- CSC 531 C++ & Object Oriented Software Design (3) I, OD**
Procedural abstraction; data abstraction; objects; messages; methods; classes; objected or oriented programming. P: CSC 222.
- CSC 533 Organization of Programming Languages (3) II**
Language definition structure; data types and structures; controlstructures and data-flow; run-time consideration; interpretive languages; lexical analysis and parsing. P: CSC 527.
- CSC 535 Introduction to Compiler Design (3) I, AY**
Review of program language structures, grammars, translation, loading, execution and storage allocation; compilation of simple structures. Organization of a compiler including compile-time symbol tables, lexical scan, syntax and semantic analyzer, object code generation, error diagnostics; object code optimization techniques; overall design. P: CSC 527.
- CSC 536 Introduction to Systems Programming and Operating Systems (3) I**
Assembler, loader, linker, introduction to operating systems, interrupt processing; memory management; multitasking; input/output control systems. P: CSC 511, 527.
- CSC 538 Networks—LAN & NOS (3) I or II**
Lan, topologies, bus, star, ring, interface cards, network operating system, Novel NetWare; passwords, login scripts, menu, filter, syscon, print services, file services, security. This course was formerly titled "Introduction to Local Area Networking (LAN.)". P: CSC 222 or industry experience.
- CSC 539 Operating Systems Structure and Design (3) II**
Concurrency control; memory management; CPU Scheduling; file structure; security and protection. P: CSC 536.
- CSC 540 Introduction to File Organization and Data Base Systems (3) I**
File processing environment; indexing structures; sequential and random access files; basic concepts of data base management systems; relational data base theory including normalization up to 3NF; query languages. P: CSC 527.
- CSC 541 Database Management Systems Design (3) II, AY**
Review of file organization schemes; data models; database security; protection; concurrency control; database machines. P: CSC 540.
- CSC 542 Relational Database Design (3) I or II**
Relations, relational algebra, SQL, normal forms, Database design, data dictionaries, recovery, concurrency control, two phase commits, application program generator. P: CSC 222 or industry experience.
- CSC 544 Graphical User Interfaces Development (GUI) (3) I or II**
Overview of shrinkwrap/industry standard GUI; experience defacto GUI design, word processors, spreadsheets, graphics packages, GUI design; user-centric design principles, standard GUI components/usage, list boxes/ radio buttons/ checkboxes/ pull-down menus/ icons/ toolbars/ etc., GUI Navigation. P: CSC 222 or industry experience.
- CSC 546 Client/Server Fundamentals (3) I or II**
Philosophy, distributed data, distributed processing, netware loadable modules (NLM), application programming interfaces (API). P: CSC 222 or industry experience.
- CSC 548 Object Oriented Design (3) I or II**
Encapsulation, information hiding, object responsibility, member functions, instantiation, class, inheritance, abstraction, ad hoc polymorphism, operator overloading, parametric polymorphism, decomposition, messages, interfaces, coupling, assertions, analysis, problems, solutions, information, entities, events, relationships, notation, reusability, extensibility, portability, maintainability. P: CSC 222 or industry experience.
- CSC 550 Introduction to Artificial Intelligence (3) I, AY**
Problem-solving systems and search methods; representation of knowledge and expert systems; game playing; machine learning and perception; implementing artificial intelligence systems. P: CSC 222, 527.

- CSC 555 Computer Graphics (3) I, AY**
 Display memory; generation of points, vectors, shapes, etc.; interactive versus passive graphics; graphics display devices and plotters, analogue storage of images; digitizing and digital storage; pattern recognition; data structures and graphics software; the mathematics of 2-D and 3-D transformations; projections; applications in computer-aided design and instructions. P: CSC 527.
- CSC 571 Introduction to Data Communication and Networks (3) I or II**
 Teleprocessing; data communication systems; components; communication protocols and interfaces; functional layers; switching and error handling; networking and interfaces; routing and flow control; broadcasting; local/broad area network reliability, security and other issues. P: CSC 514.
- CSC 621 Theory of Computation (3) I 1995-96, AY**
 Formal languages, finite automata, Turing machines, computability and decidability of Turing machines, recursive functions and space time complexities of Turing machines. P: CSC 527 or equiv. and IC.
- CSC 623 Numerical Analysis: Linear (3) I, AY (Same as MTH 623)**
 Linear systems of equations, Gaussian elimination, error analysis and norms; Jacobi's method; Gauss-Sidel method; overrelaxation; computation of eigenvalues and eigenvector; Hausholder's method.
- CSC 625 Applied Combinatorics (3) II 1995-96, AY**
 Combinatorial and graphical techniques for complexity analysis including generating functions; recurrence relations; Polay's theory of counting; planar directed and undirected graphs. NP complete graphs; applications to analysis of algorithms and sorting and searching. P: IC.
- CSC 627 Data Structure and Algorithm Analysis (3) OD**
 Graphs, memory management techniques, algorithm design and analysis, algorithms and data structure integration.
- CSC 633 Neural Networks (3) II OD**
 Introduction to Neurocomputing, learning laws, associative networks, mapping networks, applications.
- CSC 635 Coding Theory (3) I 1995-96, AY (Same as MTH 635)**
 Weight, minimum weight; maximum-likelihood decoding; syndrome decoding; perfect codes; Hamming codes; sphere-packing bound; self-dual codes; Golay codes; B.C.H. code; cyclic codes.
- CSC 637 Fuzzy Neural Networks (3) II 1994-95**
 Intelligent systems; neural networks; learning laws; neural network paradigms; fuzzy associative memories.
- CSC 641 Relational Database Systems (3) II 1994-95, AY**
 Relations and relational schemes; relational operators; functional dependencies; normal forms and multi-valued dependencies; tableaux; chase; null values; partial information. P: CSC 527 or IC.
- CSC 643 Numerical Analysis: Nonlinear (3) OD (Same as MTH 643)**
 Numerical differentiation and integration; solutions of equations and systems of equations; polynomial approximations; error analysis and eigenvectors; applications to digital computers. P: MTH 246.
- CSC 644 Information Retrieval System Design (3) OD**
 Review of information retrieval problems; functional overview of information retrieval; deterministic and probabilistic models; text analysis and automatic indexing; query formulation; system/user interfacing and learning mechanisms; intelligent system design; retrieval evaluation; experimental information retrieval systems; applications to natural language processing. P: CSC 527.
- CSC 650 Advanced Artificial Intelligence (3) II, 1996-97, AY**
 Search techniques, knowledge representation, game playing, natural language processing expert systems, applications. P: CSC 550 or IC.
- CSC 655 Advanced Computer Graphics (3) I, 1995-96**
 Graphics hardware, projective geometry 2D and 3D, interaction, curves, surfaces, solids, color, and the elusive search for reality. The general knowledge of the C language is assumed.

- CSC 683 Fuzzy Mathematics** (3) I, 1994-95 (Same as MTH 683)
Crisp sets; fuzzy sets; classical logic; fuzzy logic; operations of fuzzy sets; fuzzy relations; fuzzy measures; uncertainty and information; application to management and decision making; computer science; systems science.
- CSC 687 Applications of Fuzzy Set Theory** (3) II, 1994-95
Applying fuzzy set theory to control problems; pattern recognition; fuzzy logic, expert systems.
- CSC 715 Advanced Computer Architecture** (3) II, 1995-96, AY
Advances in computer architecture, data flow computers, application oriented, and high-level language oriented architectures; back and front-end machines; distributed computing; systolic machines; study of features of selected computer architectures. P: CSC 515.
- CSC 717 Parallel Processing and Architectures** (3) OD
Various parallel architectures and their comparative study, models of parallel computation, processor arrays, multi-processors, dataflow computers and systolic array structures, special architectures. P: CSC 515, 527.
- CSC 721 Analysis of Algorithms** (3) I, 1994-95, AY
Theoretical and computational analysis of various algorithms. Topics include sorting, searching; series and polynomial arithmetic; linear and nonlinear recurrences; backtracking; matrix multiplication; abstract machines; boundedness and NP completeness. P: CSC 527.
- CSC 731 Software Engineering** (3) II, 1994-95, AY
Basic concepts and major issues of software engineering; current tools and techniques providing a basis for analyzing, developing, maintaining, and evaluating the system; technical, administrative, and operating issues; privacy, security and legal issues. P: CSC 527.
- CSC 736 Advanced Operating Systems** (3) I, 1994-95, AY
Review of contemporary OS, OS design principles and strategies, examination of communication and synchronization protocols, concurrent processes and process scheduling and their statistical analysis, memory organization and management, protection mechanism and security. P: CSC 536.
- CSC 739 Data Communication and Computer Networks** (3) I, 1995-96, AY
Teleprocessing; data communication systems components—media, hardware and software; networks architectures and topology; communication protocols and interfaces; functional layers; communication media; line utilization, switching, and error handling; network interfaces, routing and flow control; point-to-point, broadcasting, and local networks theory and current practices; reliability and security, encryption practices; reliability and security, encryption.
- CSC 741 Knowledge Based Systems** (3) OD
Knowledge acquisition, representation, abstraction, and management techniques; knowledge storage and retrieval; types of knowledge based (KB) systems, architecture of KB systems. Machine learning, connection machines, robotics, pattern recognition systems and expert systems. Applications in signal processing, medicine, spectroscopy, chemometrics.
- CSC 743 Deductive Database Systems** (3) OD
Syntax and semantics of deductive database; structure and representation of logic rules, recursion; queuing processing techniques, naive and semi-naive evaluation; evaluation methods; magic set, AD, IMS, and wave front methods; parallel processing techniques.
- CSC 751 Digital Image Processing** (3) I, 1995-96, AY
Conversion of visual to digital images; binarization, thresholding, sampling; smoothing and sharpening; Fourier optics; orthogonal transformation; image representation, feature extraction and selection; shape descriptors; image encoding and restoration.
- CSC 753 Pattern Recognition** (3) I, 1995-96 AY
Introduction to statistical decision theory and matrix algebra; pattern and pattern characteristics; construction of pattern recognition systems, data acquisition, preprocessing; transformations; feature selection, extraction and analysis; learning and decision rules; clustering; discriminant analysis; applications to character recognition; signal processing, speech, remote sensing, etc.

- CSC 756 Computer Vision (3) OD**
Introduction to digital images, gradient operators, straight line detection, Hough transform, Hough transform based line detection algorithms, algorithms for detection of circles, ellipses. Generalized Hough transform, detection of arbitrary shapes. This noncurrent course is included here for record purposes only.
- CSC 790 Major Report (3) OD**
Research and preparation of master's major report on a specific topic of current interest with the guidance of a graduate faculty member in computer science. This noncurrent course is included here for record purposes only.
- CSC 793 Directed Independent Readings (3) OD**
- CSC 795 Directed Independent Study (3) OD**
- CSC 798 Major Report (3) OD**
- CSC 799 Master's Thesis (6) OD**

ECONOMICS (ECO)

Professors Allen, Goss, Murthy, Nitsch, and Phillips; *Associate Professors* Fitzsimmons, and Stockhausen, (Chair, Department of Economics and Finance); *Assistant Professors* Cahill and Knudsen; *Associate Professors Emeriti* Funk and Robertson.

Economics is not offered as a graduate major. However, the following Economics courses may, with the approval of the major adviser, be included as specified in certain graduate degree programs offered by various other departments.

- ECO 508 Development of Political Economy (3) I or II (Same as INR 508)**
Evolution of economic doctrines and analysis from biblical and Graeco-Roman origins to modern times, with an emphasis on "orthodox" or mainstream "schools" and developments and critical movements and departures therefrom. P: ECO 205 or equivalent for Graduate students.
- ECO 518 Comparative Economic Systems (3) I or II (Same as INR 518)**
Analysis of modern variants of capitalism and socialism in light of the basic problems and principles applicable to all social economies. Fulfills the College of Business Administration requirement for an international course. P: ECO 205 or equivalent for Graduate students.
- ECO 528 International Economic Development (3) I or II (Same as INR 528)**
Contemporary theories of economic development and their relationship to the continuing problems of unemployment, income distribution, population growth, urbanization, and economic growth in the Third World. P: ECO 205 or equivalent for Graduate students.
- ECO 538 International Trade and Finance (3) I or II (Same as INR 538)**
Basic theory of inter-regional and international trade; analysis of the international economy, including the institutions, procedures and policies of world trade and finance. P: ECO 205 or equivalent for Graduate students.
- ECO 725 Seminar in Comparative Economic Systems (3) OD (Same as INR 725)**
Critical examination of modern variants of market-type and centrally-planned economies, commencing with a review of the basic problems and principles applicable to all socio-economic systems, and proceeding with a study of models, cases, and selected aspects of the existing forms of socialism and capitalism. Consideration is given to the interplay of the level of economic development with related cultural, technological, and environmental factors in determining the structural, operational, and performance characteristics of politico-economic systems. Deviationist tendencies within the "isms" and the related "Convergence Hypothesis" are viewed in conclusion. P: ECO 518.
- ECO 779 Seminar in International Economics (3) OD (Same as INR 779)**
Directed individual research and reports on approved topics in advanced theory, problems, and policies in international trade and finance. P: ECO 538.

EDUCATION (EDU) AND COUNSELOR EDUCATION (COU)

EDUCATION (EDU)

Professor Emeritus O'Connor; Professor Dickel (Chair); Associate Professors Doyle and D. P. Hartnett; Assistant Professors Brock (Director of School Administration), C. Cook, T. Cook, Hamman, Ponec, and L. White (Director of Counselor Education); Adjunct Assistant Professors Dixon and Rowland.

Program Objectives, Prerequisites for Admission, and Requirements

Three master's degree programs are offered by the Department of Education. Their objectives, prerequisites for admission, and requirements are described below.

Master of Science (M.S.) with a Major in Elementary-School Administration

This program is designed for the individual who desires to prepare for the position of elementary school principal. The program consists of required courses designed to provide both theoretical and practical knowledge of elementary-school administration. The need to acquire decision-making skills is stressed in components of courses designed to improve leadership capabilities.

One must possess a teaching certificate and be a successful teacher as a prerequisite for admission to this program and have acceptable scores on the Pre-Professional Skills Test (PPST).

The following courses constitute the required courses of the program. EDU 600, 609, 610, 615, 620, 622, 624, 625, 628, and 692 as well as COU 544 and 642.

Anyone with a master's degree from another institution must complete a minimum of twenty-four graduate semester hours in Education at Creighton to qualify for a recommendation for an administrative certificate.

No one may take the graduate comprehensive examination until they are in the final six hours of the thirty-six hours program.

Master of Science (M.S.) with a Major in Secondary-School Administration

This program is designed for the individual who desires to prepare for the position of secondary-school principal. The program consists of required courses that are designed to provide both theoretical and practical knowledge of secondary-school administration. The need to acquire decision-making skills is recognized in various components of the required courses. The program is comprehensive and includes the study of several areas of knowledge -- both direct and auxiliary -- that are essential when considering the responsibility of the administrative position.

One must possess a teaching certificate and be a successful teacher as prerequisites for admission to their program and have acceptable scores on the Pre-Professional Skills Test (PPST).

The following courses constitute the required courses of the program: EDU 600, 610, 615, 622, 624, 625, 630, and 692 as well as COU 544 and 546.

Anyone with a master's degree from another institution must complete a minimum of twenty-four graduate semester hours in Education at Creighton to qualify for a recommendation for an administrative certificate.

No one may take the graduate comprehensive examination until they are in the final six hours of the thirty-six hours program.

Master of Science (M.S.) with a Major in Counseling

this program is organized on the assumption that an effective counselor must be a personally adequate person who has a cognitive understanding of humankind and counseling theory. In addition to intellectual understanding the counselor must continually develop proficiencies and competence in specific skills germane to the helping relationship. It is important for the student beginning this program to understand that he or she is expected to further his or her maturity in all three areas — personal growth, cognitive understanding, and technical competence.

Programs are designed to meet the needs, on the Master's level, of those interested in various counseling roles and student personnel services. These programs are designed to develop the competencies demanded of an individual embarking on a career in one of these areas. Such individuals are usually employed by school systems, employment services, colleges, and community agencies. To be employed in a school system, a counselor must be certified by a State Department of Education. In many states, counselor certification demands a teaching certificate and teaching experience. It should also be noted that potential employers frequently impose additional requirements above those needed for certification, e.g., teaching experience within that system.

If one desires to be **certified** to function as a counselor in an elementary or a secondary school, entrance into the program requires twenty-four semester hours of Education and a teaching certificate. The undergraduate program must include at least two of these courses: general psychology, educational psychology, tests and measurements, child psychology, human growth and development. School counselors must have two years of successful full time teaching experience to add a counseling endorsement. Counseling course work can be pursued concurrently with attaining the required teaching experience.

If one does not wish to be certified as a counselor in an elementary or a secondary school and intends to seek employment elsewhere, entrance into the program requires **twenty-four** semester hours in the behavioral sciences. Of this number, **twelve** must be upper-division. It is assumed also that general psychology will have been taken as a prerequisite to the upper-division work. An evaluation of one's undergraduate program will be made to determine how adequate it is for entrance into this program. It must be understood that the completion of this type of program **will not** qualify one to be a counselor in an elementary or secondary school.

The programs are competence based so that a candidate must demonstrate competency in a number of skills in each course in the counseling core before receiving a satisfactory grade. COU 542, Seminar in Counseling, includes competencies completed in self assessment by means of psychometric instruments and participation in a personal growth group. The student is expected to enroll in COU 680 after completing five core courses. Final grades in COU 542 and 680 will be either Satisfactory or Unsatisfactory.

A student may not enroll in internship until the core requirements including a practicum have been completed. The student who does not plan his or her course work to accomplish this will need to return during another semester or summer session to

complete the degree requirements. Occasionally, a student may have completed a core course on another campus before transferring to Creighton. Even though the credit is accepted in the transfer, the competencies assigned to that course must be demonstrated prior to being permitted to enroll in internship. The internship requires 300 clock-hours on site at a school or agency during normal business hours. Full-time students can complete this during one semester. Part-time students will need to arrange a flexible schedule with their employer to complete the requirements in one semester. The course requirements demand two or more semesters for students who cannot gain released time from their present employment.

The internship is taken only after all core courses are completed satisfactorily. The internship cannot be completed before the final semester or summer of attendance unless the student can present sufficient cause for modification.

The following courses constitute the required core of the program: EDU 615, COU 540, 542, 544, 610, 612, 620, 630, 680, and internship. In addition, students wishing to be elementary school guidance counselors are required to take COU 642 as a part of their core. Students wishing to be secondary school guidance counselors are required to take COU 640 and 646 as part of their core. Students wishing to be community counselors are required to take COU 640 as part of their core, and students pursuing specialization in college counseling and student development are required to take COU 640 and 650 as part of their core. It is expected that during the first semester or summer of attendance the student will enroll in COU 540 and 542. For each area of specialization, elective hours will be necessary to achieve the 39 hours required for degree completion. Students should consult with the director of the counselor education program for recommendations of acceptable electives.

The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by a score of 550 in the TOEFL (Test of English as a Foreign Language) examination.

NOTE: Effective for those admitted after July 31, 1990, thirty-nine (39) semester hours are required for the Master of Science degree with a major in counseling.

- EDU 500 Remedial Reading (3) II, S**
Focus of the course is on meeting the variety of individual educational needs that confront a teacher of reading. Techniques, methods, materials, and organizational systems that can be used within the framework of daily instruction. P: EDU 311.
- EDU 501 Psychology of Exceptional Children (3) I, PS**
A multidisciplinary and life span approach to the study of persons with differences. P: Jr. stdg.
- EDU 502 Introduction to Mental Retardation (3) OD**
Nature of mental retardation, basic concepts of identification, classification, terminology, etiology, the social context, family, school and institution; the attributes and characteristics of the mildly/moderately handicapped with an emphasis on mental retardation comprise the major areas of emphasis. P: Jr. stdg.
- EDU 505 Methods and Strategies for Working With Families and Support Personnel for Exceptional Children and Youth (3) OD (Same as SWK 505)**
Course designed to address the needs of families of exceptional children and youth and train the support personnel who work with exceptional children. P: EDU 501; Jr. stdg.
- EDU 506 Workshop in Environmental Education (1) S (Same as NSC 506)**
Advanced Project WILD. Special topics in the teaching of environmental education for those who have participated in a Project WILD or Aquatic WILD workshop. May be repeated to a limit of three semester hours. An extra fee will be assessed

- EDU 508 The Computer in the Classroom I (3) OD**
An introduction to the use of computers in the classroom (K-12) utilizing either Macintosh LC's, Apple IIe's, or IBM Model 25's. In a workshop setting, the course will examine how computers can be used by the teacher and students to 1) manage responsibilities and paperwork, 2) make presentations, 3) facilitate critical thinking, and 4) develop instructional materials.
- EDU 509 Principles of Technology I (3) II, S (Same as PHY 509)**
This course is designed to prepare teachers to institute a Principles of Technology course, a high school course in applied science for vocational-technical students in the eleventh and twelfth grades. Principles of Technology is designed to teach the practical principles in physical science that help students understand the behavior (and misbehavior) of modern equipment.
- EDU 513 Gentle Teaching (3) OD**
Gentle teaching is a way to help teachers and other professionals help children and adolescents with severe behavioral difficulties. It is a practical and well tested caregiving approach that focuses on non-aversive intervention strategies.
- EDU 514 Whole Language:Philosophical Perspective for Reading (3) OD**
Exploration of special methods and materials related to the Whole Language Philosophy in reading education. P: EDU 311 strongly recommended.
- EDU 517 Mental Health Intervention Strategies for Children and Adolescents (3) OD**
A theoretical and applied analysis of emotional disorders in children and adolescents which focuses on the identification and assessment of psychiatric disorders and intervention strategies.
- EDU 530 Innovations in Teaching Elementary Art (3) S 1994**
Designed to prepare K-8 classroom teachers to teach art using the components of art history, aesthetics, art criticism, and art production; emphasis is placed on curriculum design that includes multicultural, cross curricular instruction. P: Jr. stdg.
- EDU 531 Current Trends in Teaching Mathematics K-8 (3) OD**
Designed to provide information for teachers K-8 on recent trends in the teaching of mathematics with emphasis on new standards by the National Council for Teachers of Mathematics.
- EDU 532 Sharing Christian Values: How To Do It in the Classroom (3) OD**
The question often confronting teachers in Catholic elementary and secondary school is, "How can we become more effective in transmitting the values of the Gospel and our own school's philosophy?" Course designed to help teachers clarify their own understanding of faith and Christian values. Consideration given to the question of how teachers of so-called secular subjects can be instrumental in forming the values and faith of students.
- EDU 533 Shakespeare in the Classroom (3) S**
Four-day intensive study for teachers of English and drama. Exploration of innovative educational strategies and practical application of Shakespearean texts in today's classroom. Lecture and demonstration, small group and private instruction. Instructors include members of Twelfth Night, the theater company. Participants will develop an individual or group project and compile a source book of activities presented during the workshop. Includes preparation of an in-depth unit of study, appropriate to grade level, incorporating interdisciplinary and multi-cultural strategies.
- EDU 534 Learning Styles, Self Esteem and Movement (3) S, 1994**
Course has three major components: learning styles theory and practice, movement activities which enhance brain integration, and the emotional and developmental needs of children as related to their self-esteem.
- EDU 535 Human Relations and Cultural Diversity (3) I, S**
Course designed to provide teacher educators with human relations skills and to foster insight into effective communication with diverse racial and/or cultural groups. This course meets the human relations requirement of the Nebraska Department of Education. P: DC.
- EDU 536 Practicum and Application of Shakespeare in the Classroom (3) S**
Course designed to provide participants who have completed the Shakespeare in the Classroom Workshop with an opportunity to observe, to apply, and to practice the innovative educational strategies learned in that previous course. Actors and instructors from the Shakespeare in the Classroom Workshop will assist participants in preparing and in teaching educational strategies to gifted junior and senior high school students in the Ad Astra and Arete Programs. P: ECU 533.

- EDU 537 A Nebraska History Experience for Teachers (3) OD**
 Course designed to assist classroom teachers in understanding the historical and cultural development of Nebraska. Participants read specified literature dealing with this development. The readings deal with the sites to be visited during the field experience. These readings will be completed prior to the tour of Nebraska historical sites. P: Sr. stdg.
- EDU 538 Parks and Public Use Areas as Learning Sites (3) OD**
 Designed to assure appropriate educational and recreational use of local and area outdoor environment facilities by classroom teachers and their students (K-12). Basic understanding of the concepts involved in maximizing the effectiveness of outdoor facilities. Extra fee required. P: IC.
- EDU 539 Nebraska Science Tour for Teachers (3) OD**
 Designed to expose teachers to and assist them in understanding natural sciences in the state of Nebraska. Includes energy, weather, geology, and biology. Readings in specific literature and text material to be completed before and during the tour. Field experience includes a 1,700-mile group tour of the state of Nebraska with participation in instructional programs at predesignated sites including such places as electrical power stations, fish hatcheries, the Niobrara River, the Sandhills, Toadstool Park, and Scottsbluff National Monument.
- EDU 548 Teaching Reading in Content Areas in Middle and Secondary Schools (3) I**
 Course designed for junior-high and secondary-school content-area teachers who have had little or no background in the field of teaching reading. Practical concepts, techniques, strategies and activities designed to enable the content-area teacher to develop better a student's reading skills and abilities while utilizing content materials. Offered only in fall semesters. P: Jr. stdg.
- EDU 553 Current Topics in Instructional Design (3) OD**
 Principles of applied behavioral analysis and learning theory, development of individualized learning programs and behavior management. P: DC.
- EDU 554 Current Topics in Classroom Effectiveness (3) II**
 Theory and application of structuring and integrating group learning activities. Employing cooperative learning principles to promote positive interdependence and individual accountability. P: DC.
- EDU 555 Teaching Students Responsible Behavior (3) I or II**
 Course designed to give professional educators the theory and skills to teach students how to take responsibility for their own behavior in school. Based on the Work of William Glasser, this course leads participants through a series of learning activities designed to enable them to teach their students the concepts of Control Theory and then to plan and implement a program of Responsibility Training in their classrooms.
- EDU 563 Assessing Organizational Systems (3) AY**
 Workshop evaluating characteristics of organizations (including schools and service organizations). Practical training in assessing the effectiveness of such interventions as curriculum, training and development, and personnel. Special emphasis on planning, conducting, and interpreting surveys; developing questionnaires, interpreting results, and writing final reports.
- EDU 564 The Internet: An Educational Resource (3) II, 1994-95**
 Discussion of educational resources available on the Internet. Students will engage in "hands-on" activities and develop curriculum using the Internet as their bases. P: IC
- EDU 565 Hypermedia in the Classroom (3) S, 1994 (Same as JMC 565)**
 Introduction to hypermedia and its uses in teaching and learning. A review of linear and branched instruction, microworlds, interactive videodiscs, CD-ROM, graphics, Xap Shot, and design of computer-based learning. Course may be repeated to a maximum of six semester hours. P: IC.
- EDU 566 Introduction to Computer Based Learning (3) OD (Same as JMC 566)**
 Course designed to acquaint the student with research findings in the area of computer based learning and to explore the principles of effective use of computers in classrooms. Introduction to Hypercard as a vehicle for creating effective computer based learning environments.
- EDU 567 Advanced Helping Skills for Parents and Teach (3) OD**
 Participants will continue to develop skills in corrective helping by discussing the theory of helping and practicing skills in a variety of involvement levels. Discussion of the theory of self-esteem development and its role in helping others. P: EDU 553.

- EDU 571 Working With Troubled Families (3) S** (Same as COU 571, SWK 571)
Designed to give the participants an understanding of family dynamics; why troubled families remain troubled; how intervention can help a family overcome its difficulties. Theoretical presentations and exercises relating to these presentations with opportunities for class discussion of both. P: Jr. stdg.
- EDU 573 Production of Instructional Videotapes (3) S** (Same as JMC 573)
Workshop designed especially for teachers wanting concentrated "hands on" work in the basic skills of television production. Individuals will learn to produce and shoot instructional programs on the VHS 1/2" format. Emphasis on "hands on" usage of equipment, supplemented by lectures regarding aesthetic and technical production principles.
- EDU 581 Teaching Students How to Think, Level I (3) S**
A Level I Training Session in the Feuerstein Instrumental Enrichment Program, a classroom curriculum designed to diagnose and correct deficiencies in thinking skills and to help students learn how to learn. P: Sr. stdg.
- EDU 582 Teaching Students How to Think, Level II (3) OD**
A Level II Training Session in the Feuerstein Instrumental Enrichment Program, a classroom curriculum designed to diagnose and correct deficiencies in thinking skills and to help students learn how to learn. A continuation of EDU 581 at the advanced level. P: EDU 581.
- EDU 583 Management Practices for Classroom Teachers (3) S** 1994
Creating and/or maintaining a positive learning environment through techniques of observation, description, measurement and evaluation for optimum student learning.
- EDU 588 Developing Vocational Skills for the Mild/Moderately Handicapped, Ages 3-21 (3) OD**
Exploration of current, innovative vocational programs for the trainable and educable mentally handicapped; why and how these programs developed; ways to implement such programs.
- EDU 589 Advocating for Children: Child Abuse and Neglect in the '90s (3) OD**
Course designed to provide the student with a framework in which abuse and neglect can be identified and with a plan of action for referral and support services in the event he or she encounters abuse and/or neglect in his or her professional role.
- EDU 590 First-Year Teacher Induction Workshop (3) I**
Designed to facilitate teaching during the first year of experience. Participants will prepare for their first year of teaching by becoming familiar with their new school; preparing a calendar; curriculum materials; and teaching materials specific to their school setting. Assistance will be provided during the first weeks of the school year. P: Certified to teach; contracted for a Fall teaching position.
- EDU 600 Principles of Curriculum Construction for Elementary and Secondary Schools (3) S**
Course designed to prepare educators for instructional leadership in identifying curriculum determiners, planning procedures, and evaluation processes for both elementary and secondary schools.
- EDU 609 Principles of Organization and Administration for Elementary and Secondary Schools (3) I, S**
Introduction to the processes of educational administration. Exploration of the role and responsibility of elementary- and secondary-school principals, policies and procedures, and the principalship as a profession.
- EDU 610 Introduction to Learning Disabilities (3) I, S**
Current theories, identification and etiology of learning disabilities, and diagnostic methods. Emphasis on development of specific methodology and teaching strategies for various learning disabilities. Attention to the implementation of the strategies for the regular and special classroom teaching. P: EDU 501.
- EDU 611 Introduction to Educating the Behaviorally Impaired Child (3) OD**
Study of the behavioral abnormalities in children with emphasis on social and emotional disorders, causes and treatment. P: EDU 501.
- EDU 612 Problems in Educating the Behaviorally Impaired Child (3) OD**
Study of the various intervention techniques available for working with emotionally disturbed students. P: EDU 501, 611.
- EDU 615 Educational Research (3) II, S**
Introduction to three general educational research methods — historical, descriptive, and experimental. Students will manage a small-scale study.

- EDU 616 Consulting Techniques (3) S 1994**
Course designed to acquaint students with models for providing consultation to schools, teachers, and students. Distinction between medical and consultation models is provided, and goals for consultant behaviors and the culture of the school are discussed. Emphasis on problem-solving, collaborative consultation, curriculum-based measurement, and precision teaching.
- EDU 620 Practical Aspects of School Law for Teachers and Administrators (3) II**
The legal rights, duties, and liabilities of school personnel in relation to their employer, colleagues, pupils, and parents.
- EDU 622 Improving Your School-Community Relations (3) S**
Examination of the principles and practices used to improve the public relations between the school, parents and community.
- EDU 624 Supervision of Learning (3) I, S**
Reviewing and appraising the instructional process; organizing the supervision program with attention to the leadership role of the principal; developing in-service programs and promoting professional growth.
- EDU 625 Practical Knowledge of School Finance for Teachers and Administrators (3) I**
Designed to meet the needs of elementary- or secondary-school principals and teachers in the fiscal and business aspects of school operation.
- EDU 628 Field Service Experience in Elementary School Administration (3) I, II**
Internship available to students who wish to qualify for a principal's certificate. Program is directed by the Department of Education and the chief executive officer of the school in which the intern is placed. P: 18 hrs. of core requirements; DC.
- EDU 629 Introduction to Gifted Education (3) OD**
Introductory course dealing with the personality and learning characteristics of gifted and talented children in the following areas: intellectual, academic, psychomotor, leadership, visual and performing arts, and creative and productive thinking. Includes discussion and activities relating to identification and program development. Classroom activities and strategies developed during the workshop.
- EDU 630 Field Service Experience in Secondary School Administration (3) I, II**
Internship available to students who wish to qualify for a principal's certificate. Program is directed by the Department of Education and the chief executive officer of the school in which the intern is placed. P: 18 hrs. of core requirements; DC.
- EDU 644 Remediation of Learning Disabilities (6) OD**
Methods and materials used in remediating auditory and visual perceptual problems and academic areas of reading, writing, spelling, and arithmetic. P: EDU 646.
- EDU 645 Language Problems in Exceptional Children (3) OD**
Language variance of handicapped children is studied in relationship to normal language acquisition. Additional emphasis on assessment of programming techniques. P: EDU 610.
- EDU 646 Diagnostic and Prescriptive Techniques of Learning Disabilities (6) OD**
Analysis of various individual tests used with learning disabled students to evaluate cognitive, perceptual, and academic abilities. P: EDU 610.
- EDU 647 Practicum in Learning Disabilities (3) OD**
Student teaching with learning disabled children in either a self-contained resource or diagnostic situation. P: 21 hrs. of core requirements.
- EDU 648 Advanced Practicum in Learning Disabilities (3) OD**
A second supervised experience with learning disabled children in either a self-contained resource or diagnostic situation. P: 21 hrs. of core requirements; EDU 647.
- EDU 649 Practicum in Behavioral Impairment (3) OD**
A supervised experience with behaviorally impaired children in a school setting. P: 21 hrs. of core requirements.
- EDU 650 Advanced Practicum in Behavioral Impairment (3) OD**
A second supervised experience with behaviorally impaired children in either a school or institutional setting. P: EDU 649; 21 hrs. of core requirements.

- EDU 657 Research Seminar in Learning Disabilities (3) OD**
Course designed to develop skills in reading and interpreting research pertaining to the learning disabled student and implementing it in applied settings. P: EDU 615.
- EDU 666 Multicategorical Methods for the Mildly Handicapped 7-12 (3) OD**
Course designed to provide alternative approaches for programming for the adolescent with learning disabilities. Emphasis on meeting academic as well as social and emotional needs. Approaches to self management. Career planning. P: EDU 610.
- EDU 670 Research Seminar in Behavioral Impairment (3) OD**
Course designed to develop skills in reading and interpreting research pertaining to the behaviorally impaired student and implementing it in applied settings. P: EDU 615.
- EDU 692 Cultural Issues in Education (3) S**
Course emphasizes the global dimensions in education dealing with multi-cultural issues and the role of the teacher. This course meets the Nebraska Department of Education human relations requirement.
- EDU 793 Directed Independent Readings (Credit by Arrangement) I, II, S**
Intensive reading in an area as approved by the department. P: DC
- EDU 795 Directed Independent Study (Credit by Arrangement) I, II, S**
Independent research on a topic designed by the student with the approval of an adviser from the department. P: DC
- EDU 797 Directed Independent Research (Credit by Arrangement) I, II, S**
P: DC
- EDU 799 Master's Thesis (1-3) I, II**
Research in connection with the preparation of the Master's thesis. Student must register for this course in any term when engaged in formal preparation of the Master's thesis; however, six credit hours are the maximum applicable toward the degree. P: DC

COUNSELOR EDUCATION (COU)

- COU 540 Introduction to Counseling (3) I, II, S (Same as PSY 540)**
A survey of the counseling process including the role of the counselor, characteristics of clients, helping and referral skills, and theories of counseling. P: Sr. stdg.
- COU 542 Seminar in Counseling (1) I, II, S**
Self assessment of skills appropriate to counseling by means of psychometric assessment and participation in a personal growth group. P: IC. CO: COU 540.
- COU 544 Life Span Development (3) I, S, AY**
Focuses on a broad overview of physical, special, and psychological aspects of human development from conception to old age. P: Jr. stdg.
- COU 571 Working With Troubled Families (3) S (Same as EDU 571, SWK 571)**
Designed to give the participants an understanding of family dynamics; why troubled families remain troubled; how intervention can help a family overcome its difficulties. Theoretical presentations and exercises relating to these presentations with opportunities for class discussion of both. P: Jr. stdg.
- COU 573 Treatment Modalities in Marriage and Family Therapy (3) OD (Same as SWK 573)**
The primary family systems modalities in marriage and family therapy are presented both in theory and in case study analysis. The presenting problem, history of the problem, family history, identification of dysfunctional dynamics, goals, plan of treatment, and outcome/evaluation are emphasized in each modality. P: IC.
- COU 575 Introduction to Peer Education in Student Development Programming (3) OD**
Introductory course in the conceptualization, development, and practical application of innovative outreach programming in student service settings. Emphasis on presentation development in such areas as interpersonal relationships, health and wellness issues, stress management, alcohol and drugs, career planning, and leadership development. P: Jr. stdg.

- COU 580 Theory and Treatment of Addictive Disorders (3) I**
Presentation of substance abuse theory, various treatment approaches, and intervention strategies which are currently in use in chemical dependency treatment and prevention programs. Students will have the opportunity to explore several theoretical approaches, incorporate these approaches into their own on-going developmental body of knowledge, and develop an integration plan to utilize their own personal theory of counseling in a program of treatment for chemical dependency. P: Jr. stdg.
- COU 582 Family Dynamics of Addictive Disorders (3) OD**
Designed to provide students with an understanding of various ways in which the family is affected by the addiction of one or more of its members. Students will have the opportunity to explore several theoretical approaches to family work, become aware of current research in the area, gain an understanding of current intervention strategies used with the family, and explore the variety of ways in which the family is involved in the rehabilitation process. P: Jr. stdg.
- COU 584 Stress and Crisis Management (3) II**
An understanding of the nature and causes of personal stress and crisis situations, methods of intervention and management. Emphasis on practical application through simulation and practicum situations from both a personal and professional perspective. P: COU 540.
- COU 586 Drug Use and Human Behavior (3) OD**
Examination of the effects of drug use on society and the effects of society on drug and alcohol use with emphasis on substance abuse and addiction. Discussion of the history of legal restrictions on the possession and sale of drugs in the United States. The pharmacology of commonly abused drugs will be described in terms that can be understood by those who are not in the health professions. P: Jr. stdg.
- COU 590 Counseling Significant Losses (3) I**
An investigation of the counseling process as applied to life events that occur in the area of significant loss. An investigation of the role of the counselor, characteristics of clients, helping and referral skills, and theories of counseling as applied to significant loss events. P: IC.
- COU 610 Counseling Theories and Methods (3) I, S**
Course presents theories of counseling, processes associated with each theory, and the goals which each theory attempts to reach. CO: COU 612.
- COU 612 Practicum in Counseling (3) I, II, S**
Course designed to enhance the development of counseling skills and practices. Students will use laboratory facilities to learn and practice counseling behaviors with students peers. P: COU 540 & 610.
- COU 614 Selected Approaches to Individual Counseling (1-3) OD**
Focus on a selected theory or approach to individual counseling of the instructor's choosing; a short, concentrated learning experience emphasizing acquisition of skills in implementing the chosen approach.
- COU 620 Methods in Group Counseling (3) II, S, AY**
Principles and dynamics of group processes and interaction as related to counseling classes, role playing, and personal development in counseling. P: COU 610 & COU 612.
- COU 621 Practicum in Group Counseling (3) OD**
Course designed to enhance the development of group counseling skills and practices. Students will learn and practice the leadership behaviors involved in group counseling with student peers. P: COU 620.
- COU 622 Selected Approaches to Group Counseling (1-3) OD**
Focus on a selected theory or approach to group counseling of the instructor's choosing; a short, concentrated learning experience emphasizing acquisition of skills in implementing the chosen approach.
- COU 630 Appraisal Counseling (3) I, S**
Consideration of psychometric theory and its implication for counselor usage of tests. Developing skills in test selection, administration, and interpretation. P: EDU 615.
- COU 640 Career Counseling and Programming (3) II, S, AY**
Theories of vocational development; types, sources, and use of occupational and educational information in career counseling and decision making. P: COU 620.

- COU 642 Counseling in the Elementary School (3) S, OD**
An orientation to counseling at the elementary school level through the study of current principles and practices of elementary school counseling.
- COU 644 Counseling in the Middle School (3) OD**
An orientation to counseling at the middle school level through the study of current principles and practices of middle school counseling.
- COU 646 Counseling in the Secondary School (3) S**
An orientation to counseling at the secondary school level through the study of current principles and practices of secondary school counseling.
- COU 648 Organization and Administration of Counseling Services (3) S**
Practices and problems in organizing, administrating, supervising, and evaluating pupil personnel programs at various educational levels. This course was formerly numbered EDU 680—Organization and Administration of Guidance Services.
- COU 650 Seminar in College and Student Personnel Services (3) OD**
Recommended for those who anticipate seeking counseling positions at the collegiate level. Covers organization and administration of college student personnel services with an additional focus on understanding the developmental issues of the college student.
- COU 652 Community Mental Health (3) OD**
Presentation of the development, practice, and role of community mental health. Emphasis on developing an understanding of mental health and social policy as well as on acquiring skills in preventive intervention, mental health consultation, crisis intervention, and assessment of community structure and needs.
- COU 654 Preventive Mental Health (3) OD**
An overview of the concept of mental health with particular emphasis on developing strategies to enhance coping skills, self-esteem, and support systems, and to decrease organic factors, stress, and exploitation.
- COU 656 Family Systems Counseling (3) S 1996**
A study of the dominant theories of and approaches to family systems counseling.
- COU 658 Selected Approaches to Family Counseling (1-3) OD**
Focus on a selected theory or approach to family counseling of the instructor's choosing; a short, concentrated learning experience emphasizing acquisition of skills in implementing the chosen approach.
- COU 660 Rehabilitation Counseling and Service Coordination (3) OD**
Examination of vocational rehabilitation services with emphasis on the role of the rehabilitation counselor in providing counseling and guidance services as well as coordinating rehabilitation services for the client. Rehabilitation eligibility criteria, processes, services, and problems. P: EDU 673.
- COU 661 Counseling the Aged (3) OD**
Workshop designed to explore counseling services for the aged. This field is a new and growing area for counselors. Since life expectancy now extends a number of years beyond retirement, the resources to promote and maintain positive self-esteem in the aging will be examined. What aging means to the aged in relation to the biological, sociological, and psychological changes, needs and adjustments will be covered in detail.
- COU 670 Selected Topics in Counseling (3) II, S**
Theoretical and applied aspects of counseling as selected by the designated instructor.
- COU 680 Advanced Seminar in Counseling (1) I, II, S**
Further practice in counseling skills, development of a tentative, personal theory of counseling, and discussion of professional issues in counseling. P: Completion of five core courses.
- COU 682 Internship in Elementary-School Counseling (4) I, II**
Supervised, on-site experience in counseling with elementary-school clients. Experience in the full range of counselor duties and responsibilities in an elementary-school setting. P: All core requirements & IC.
- COU 683 Advanced Internship in Elementary-School Counseling (3-4) I, II**
A second, supervised, on-site experience in counseling with elementary school clients. Experience in the full range of counselor duties and responsibilities in an elementary school setting. P: All core requirements & IC.

- COU 684 Internship in Secondary-School Counseling (4) I, II**
Supervised, on-site experience in counseling with secondary-school clients. Experience in the full range of counselor duties and responsibilities in a secondary-school setting. P: All core requirements & IC.
- COU 685 Advanced Internship in Secondary School Counseling (3-4) I, II**
A second, supervised, on-site experience in counseling with secondary-school clients. Experience in the full range of counselor duties and responsibilities in a secondary-school setting. P: All core requirements & IC.
- COU 686 Internship in General Counseling (4) I, II, S**
Supervised, on-site experience in counseling with general agency/community clients. Experience in the full range of counselor duties and responsibilities in a community agency setting. P: All core requirements & IC.
- COU 687 Advanced Internship in General Counseling (3-4) I, II, S**
A second, supervised, on-site experience in counseling with general agency/community clients. Experience in the full range of counselor duties and responsibilities in a community agency setting. P: All core requirements & IC.
- COU 688 Internship in College Student Personnel Services (4) I, II, S**
Supervised, on-site experience in counseling with college clients. Experience in the full range of counselor duties and responsibilities in a college setting. P: All core requirements & IC.
- COU 689 Advanced Internship in College Student Personnel Services (3-4) I, II, S**
A second, supervised, on-site experience in counseling with college clients. Experience in the full range of counselor duties and responsibilities in a college setting. P: All core requirements & IC.
- COU 690 Internship in Addiction Counseling (4) I, II, S**
Supervised, on-site experience in counseling with addiction clients. Experience in the full range of counselor duties and responsibilities in an addiction treatment setting. P: All core requirements & IC.
- COU 691 Advanced Internship in Addiction Counseling (3-4) I, II, S**
A second, supervised, on-site experience in counseling with addiction clients. Experience in the full range of counselor duties and responsibilities in an addiction treatment setting. P: All core requirements & IC.
- COU 793 Directed Independent Readings (Credit by Arrangement) I, II, S**
Intensive reading in an area as approved by the department. P: DC.
- COU 795 Directed Independent Study (Credit by Arrangement) I, II, S**
Independent research on a topic designed by the student with the approval of an adviser from the department. P: DC.
- COU 797 Directed Independent Research (Credit by Arrangement) I, II, S**
Intensive research in an area as approved by the department. P: DC.
- COU 799 Master's Thesis (1-3) I, II**
Research in connection with the preparation of the Master's thesis. Students must register for this course in any term when engaged in formal preparation of the Master's thesis; however, six credit hours are the maximum applicable toward the degree.

ENGLISH (ENG)

Professors Bergquist, Garcia; *Associate Professors* Fajardo-Acosta, Kuhlman, Stein, Sundermeier, Whipple, Zacharias (Chair); *Assistant Professors* Byers, Churchill, Collins, Dornsife, Keegan, Spencer, Wall

Programs and Objectives

English graduate programs are divided into two broad categories: degree programs and certificate programs.

Degree programs are programs leading to the degree of *Master of Arts* and all are constructed upon a foundation of literary study.

TRACK 1: MASTER OF ARTS WITH CONCENTRATION IN LITERATURE (33 Sem. Hrs.)

- I. Required Foundation Courses (6 hours)
 - ENG 600: Introduction to Graduate Study
 - ENG 721: Seminar in Literary Criticism
- II. Seven Courses selected from the following (21 hours)
 - ENG 701: Seminar in Medieval Literature
 - ENG 703: Seminar in Renaissance Literature
 - ENG 705: Seminar in Neoclassical Literature
 - ENG 707: Seminar in Romantic Literature
 - ENG 709: Seminar in Victorian Literature
 - ENG 711: Seminar in American Literature to 1865
 - ENG 713: Seminar in American Literature 1865-1914
 - ENG 715: Seminar in Modern English and American Literature
 - ENG 717: Seminar in Irish Literature
 - ENG 723: Seminar in Rhetorical Theory

(The candidate may petition the Graduate Director to substitute up to two Studies or Private Readings courses in lieu of seminar requirements.)
- III. Required Capstone Courses (6 hours)
 - ENG 798: Master's Essay or Three-Paper Option
 - ENG 796: Supervised Teaching Practicum

TRACK 2: CONCENTRATION IN RHETORIC AND COMPOSITION (33 hours)

- I. Required Foundation Courses (6 hours)
 - ENG 600: Introduction to Graduate Study
 - ENG 721: Seminar in Literary Criticism
- II. Required Composition Core (12 hours)
 - A History of Writing or Rhetoric Seminar (ENG 720 and 723)
 - ENG 724: Computer Applications in Composition Instruction
 - ENG 725: The Theory and Practice of Composition Instruction
 - ENG 726: Computers, Hypertext, & the Teaching of Literature
- III. Literature Support Unit (9 hours)
 - Any three Literature Seminars, selected in consultation with the Graduate Director.
- IV. Required Capstone Courses (6 hours)
 - ENG 798: Master's Essay or Three-Paper Option
 - ENG 796: Supervised Teaching Practicum

TRACK 3: MASTER OF ARTS WITH CONCENTRATION IN TEACHING (33 Sem. Hrs.)

- I. Required Foundation Courses (6 hours)
 - ENG 600: Introduction to Graduate Study
 - ENG 721: Seminar in Literary Criticism

- II. Required Composition Core (9 hours)
 - ENG 724: Computer Applications in Composition Instruction
 - ENG 725: The Theory and Practice of Composition Instruction
 - ENG 726: Computers, Hypertext, & the Teaching of Literature
- III. Required Literature Core (12 hours, selected from the following)
 - ENG 703: Seminar in Renaissance Literature
 - ENG 707: Seminar in Romantic Literature
 - ENG 709: Seminar in Victorian Literature
 - ENG 711: Seminar in American Literature to 1865
 - ENG 713: Seminar in American Literature 1865-1914
 - ENG 715: Seminar in Modern British and American Literature
 - ENG 719: Seminar in Teaching World Literature
- IV. Required Capstone Courses (6 hours)
 - ENG 798: Master's Essay or Three-Paper Option
 - ENG 796: Supervised Teaching Practicum

Additional Requirements in all Tracks: A take-home integrative comprehensive in the second year that forces synthesis among the various periods; an examination to test a reading knowledge of a major foreign language. A junior level foreign language course with a grade of B can be used in lieu of this test.

Certificate programs are programs leading to a certificate. The programs are designed to meet the needs of students who already have a Master's degree but who wish to sharpen their teaching skills and study new developments in the field. These programs are also available to students who do not possess a Master's degree but who wish to pursue specialized interests in teaching beyond the undergraduate level.

Certificate in Rhetoric and Composition (12 hours)

History of rhetoric; rhetorical or composition theory; teaching of writing; 1 additional course in one of the above 3 areas or a course outside the department related to the teaching of English such as educational administration or assessment (to be determined in consultation with the Graduate Director).

Certificate in Teaching English (12 hours)

Rhetorical or composition theory; teaching of writing; teaching of literature; 1 additional course in either the teaching of writing or the teaching of literature, or a course from outside the English Department in a teaching-related field, such as educational administration or assessment (to be determined in consultation with the Graduate Director).

NOTE: The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by a score of 550 in the TOEFL (Test of English as a Foreign Language) examination.

ENG 600 Introduction to Graduate Study (3) I

Bibliography, critical theory, and the use of electronic media in scholarship will be introduced, explored, and used in the process of literary scholarship and writing.

STUDIES IN ENGLISH — Course description for ENG 601-615: Topics, works, authors selected by the offering faculty member will be studied under close supervision and direction. Only one or two students per term will be accepted for a studies course. Only students with considerable background in the period will be admitted to the course. These are offered on demand.

ENG 601 Studies in Medieval Literature (3)

ENG 603 Studies in Renaissance Literature (3)

- ENG 605 Studies in Neoclassical Literature (3)**
- ENG 607 Studies in Romantic Literature (3)**
- ENG 609 Studies in Victorian Literature (3)**
- ENG 611 Studies in American Literature to 1865 (3)**
- ENG 613 Studies in American Literature, 1865-1914 (3)**
- ENG 615 Studies in Modern English and American Literature (3)**
- ENG 617 Studies in Irish Literature (3)**
Topics, works, authors selected by the offering faculty member will be studied under close supervision and direction. Only one or two students per term will be accepted for a studies course. Only students with considerable background in Irish Literature will be admitted to the course.
- ENG 620 Studies in the History of Rhetoric(3)**
Topics, works, authors selected by the offering faculty member will be studied under close supervision and direction. Only one or two students per term will be accepted for a studies course. Only students with background in rhetoric will be admitted to the course.
- ENG 622 Studies in Rhetorical Theory (3)**
Topics, works, authors selected by the offering faculty member will be studied under close supervision and direction. Only one or two students per term will be accepted for a studies course. Only students with background in rhetorical theory will be admitted to the course.
- ENG 630 Studies in Literary Criticism (3)**
Topics, works, authors selected by the offering faculty member will be studied under close supervision and direction. Only one or two students per term will be accepted for a studies course. Only students with background in literary criticism will be admitted to the course.
- ENG 680 Supervised Practicum in Writing (3)**
In addition to weekly conferences and/or workshops, the student will work in the English Department Writing Center: tutoring students one-on-one, analyzing writing problems, using the computer as a tutorial aid.
- ENG 681 Supervised Practicum in the Teaching of Composition (3)**
In addition to weekly conferences and/or workshops, the student will assist a senior faculty member in the teaching of a composition course: preparing a syllabus, delivering lectures, leading discussions, making assignments, grading compositions, using the computer in the teaching process.
- ENG 682 Supervised Practicum in the Teaching of Literature (3)**
In addition to weekly conferences and/or workshops, the student will assist a senior faculty member in the teaching of a composition course: preparing a syllabus, delivering lectures, leading discussions, making assignments, grading compositions.
- SEMINARS IN ENGLISH** — Course description for ENG 701-722: Thorough and intensive study of the period. Students will write papers, make in-class presentations, participate in discussions. These are offered on a regular basis. See the Graduate Director for a Perpetual Calendar.
- ENG 701 Seminar in Medieval Literature (3)**
- ENG 703 Seminar in Renaissance Literature (3)**
- ENG 705 Seminar in Neoclassical Literature (3)**
- ENG 707 Seminar in Romantic Literature (3)**
- ENG 709 Seminar in Victorian Literature (3)**
- ENG 711 Seminar in American Literature to 1865 (3)**
- ENG 713 Seminar in American Literature, 1865-1914 (3)**
- ENG 715 Seminar in Modern English and American Literature (3)**
- ENG 717 Seminar in Irish Literature (3)**
- ENG 720 History of Rhetoric (3)**
- ENG 722 Rhetorical Theory (3)**

ENG 793 Directed Independent Readings (3)

ENG 795 Directed Independent Study (3)

ENG 797 Directed Independent Research (3)

ENG 798 Master's Essay (3)

An essay of 50-75 pages on a topic agreed upon with the supervising faculty member. Upon completion, the paper will be reviewed and graded by a panel of three faculty members, including the supervising faculty member. The student will be expected to select the panel with the approval of the graduate director.

HISTORY (HIS)

Associate Professor Le Beau (Chair); Professor R. Horning; Associate Professors Dugan, J. Hoffman, Mihelich, Super, Thomas, and Welch; Assistant Professors Calvert, Elliot-Meisel, and Sheieh.

History is not offered as a graduate major. However, the following History courses may, with the approval of the major adviser, be included as specified in certain graduate degree programs offered by other departments.

HIS 540 Contemporary International Relations (3) II (Same as INR 540)

The historical foundations of contemporary international relations; includes international politics, international law, and case studies drawn from the Middle East, Canada, Ireland, Cyprus, South Africa, the Soviet Union and Eastern Europe, the Indian Sub-Continent, and the Republics of China.

HIS 541 War and Society in the Modern World (3) I (Same as INR 541)

A survey of military history from the 18th century up to and including current theories concerning future conflict to be waged with nuclear weapons.

HIS 548 History of the Soviet Union: Its Formation and Fragmentation (3) I

(Same as INR 548)

Revolution of 1905; World War I; Revolutions of 1917; Allied intervention; Civil War; NEP; Stalin-Trotsky rivalry; Stalin and the Second Revolution; World War II; relations with Eastern Europe, Asia, and the United States; internal political, economic, and literary movements from Khrushchev to the present.

HIS 562 Foreign Relations of the United States, 1898-1945 (3) I, AY (Same as INR 562)

Latin American and Far Eastern policies of Theodore Roosevelt, Taft, and Wilson; World War I; Republican foreign policies, 1921-33; Franklin D. Roosevelt; World War II.

HIS 563 United States in World Affairs Since 1945 (3) II, AY (Same as INR 563)

Origins of the Cold War; development of the "containment" policy and the alliance system of the United States under Truman and Eisenhower; foreign policies of the Kennedy-Johnson administrations; the Nixon-Kissinger policy of "detente"; the Carter and Reagan administrations.

HIS 565 The United States and Canada: The Siamese Twins of North America (3) I 1994-95 (Same as INR 565)

"The Siamese Twins of North America who cannot separate and live" are each other's greatest trading partners, are jointly responsible for continental security, and are fiercely committed to their own independence. Then why did the United States invade Canada three times? Why did the Americans in Canada call themselves the "Army of Occupation" during World War II? Why did American draft-dodgers flee to Canada during the Vietnam War? Why are Americans so ignorant of Canada, especially when Canadian security is inextricably linked to their own? Explore the relationship between these neighbors who share the world's longest undefended border; neighbors who are arguably as different as they are similar.

HIS 566 United States and the Middle East Since World War II (3) AY (Same as INR 566)

Survey of American foreign policy in the Middle East from World War II to the present. Topics include Truman's Containment Policy in the Middle East; Truman and Israel; the Baghdad Pact; the Suez Crisis; the Eisenhower Doctrine; the Six-Day War of 1967; the effects of the Arab-Israeli War of 1973 and the oil embargo; Camp David Accords; the Carter Doctrine; Reagan and the Middle East.

HIS 570 History of Canada (3) OD (Same as INR 570)
Founding of New France; Anglo-French rivalry; Canada and the American Revolution; War of 1812; evolutionary process to independence; Canadian Confederation, 1867; World War I; Statutes of Westminster, 1931; World War II; Canadian-American relations, 1775 to the present; Trudeau Era; relationship of contemporary Quebec to the Confederation.

STUDIES IN HISTORY — The following courses may include lectures, intensive reading, or investigative papers as assigned by the instructor and will be offered on demand.

HIS 603 Proseminar in American Diplomatic History (3) (Same as INR 603)

HIS 604 Studies in Ancient History (3) OD

HIS 607 Studies in Medieval History (3) OD

HIS 608 Civil-Military Relations (3) OD (Same as INR 608)

HIS 609 Studies in Early Modern Europe I (3) OD

HIS 610 Studies in Early Modern Europe II (3) OD

HIS 611 Studies in European History: 19th Century (3) OD

HIS 612 Studies in European History: 20th Century (3) OD

HIS 614 Studies in European Diplomatic History Since 1939 (3) OD (Same as INR 614)

HIS 621 Studies in British History (3) OD

HIS 623 Studies in Irish History (3) OD

HIS 625 Studies in Jewish History (3) OD

HIS 631 Studies in Russian History I (3) OD

HIS 632 Studies in Russian History II (3) OD

HIS 635 Studies in Russian Diplomatic History (3) OD (Same as INR 635)

HIS 642 Studies in Modern French History (3) OD (Same as INR 642)

HIS 643 Studies in Modern German History (3) OD (Same as INR 643)

HIS 645 Studies in German Foreign Policy Since 1945 (3) OD (Same as INR 645)

HIS 650 Studies in United States History I (3) OD

HIS 651 Studies in United States History II (3) OD (Same as INR 651)

HIS 658 Studies in United States Constitutional History (3) I

HIS 664 Studies in United States Foreign Relations I (3) OD (Same as INR 664)

HIS 665 Studies in United States Foreign Relations II (3) OD (Same as INR 665)

HIS 667 Studies in United States Foreign Relations: Post World War II (3) OD
(Same as INR 667)

HIS 668 Studies in United States Foreign Relations: United States and the Middle East (3) OD
(Same as INR 668)

HIS 672 Studies in Latin American History (3) OD (Same as INR 672)

HIS 678 Studies in Contemporary Issues in Latin America (3) OD (Same as INR 678)

HIS 680 Studies in Inter-American Relations (3) OD (Same as INR 680)

HIS 683 Studies in Asian History (3) OD

HIS 684 Studies in Asian Diplomatic History (3) OD (Same as INR 684)

HIS 690 Studies in African History (3) OD (Same as INR 690)

HIS 693 Studies in the History of Science (3) OD

HIS 695 Special Problems in History (3) OD

SEMINARS IN HISTORY — The following courses will include investigative papers and research projects as assigned by the instructor within the framework of the general course title.

- HIS 704 Seminar in Jewish History** (3)
- HIS 715 Seminar in European Intellectual History: The Enlightenment** (3) OD
- HIS 716 Seminar in European Diplomatic History Since 1919** (3)OD (Same as INR 716)
- HIS 719 Seminar in Modern European History** (3) OD (Same as INR 719)
- HIS 729 Seminar in British History: 20th Century** (3) OD (Same as INR 729)
- HIS 736 Seminar in Russian History: 19th Century** (3) OD
- HIS 737 Seminar in Russian History: 20th Century** (3) OD (Same as INR 737)
- HIS 753 Seminar in United States History Before 1877** (3) OD
- HIS 757 Seminar in United States History Since 1877** (3) OD
- HIS 769 Seminar in United States Foreign Relations** (3) OD (Same as INR 769)
- HIS 771 Seminar in United States Constitutional History** (3) S
- HIS 773 Seminar in Latin American History** (3) (Same as INR 773)
- HIS 780 Seminar in Inter-American Relations** (3) (Same as INR 780)
- HIS 782 Seminar in the History of the Modern Middle East** (3) (Same as INR 782)

Special Graduate Courses

- HIS 793 Directed Independent Readings** (Credit by Arrangement) I, II, S
Intensive reading in an area as approved by the department.
- HIS 795 Directed Independent Study** (Credit by Arrangement) I, II, S
- HIS 797 Directed Independent Research** (Credit by Arrangement) I, II, S
- HIS 799 Master's Thesis** (1-3) I, II, S
Research in connection with the preparation of the Master's Thesis. Student must register for this course in any term when engaged in formal preparation of the Master's thesis; however, six credit hours are the maximum applicable toward the degree.

INFORMATION TECHNOLOGY MANAGEMENT (MSITM)

Associate Professor Wells (Acting Director, Graduate Business Programs); *Professors Raval* (Interim Chair, Department of Information Technology Management) and *Gleason*; *Associate Professors Chien* (Marketing and Management Department) and *Marble*; *Assistant Professor Karruppan*.

Program and Objectives

The MSITM degree was implemented in Spring of 1996 to offer up-to-the-minute education in technology and its implications for management. The program is applied and current to educate professionals to be able to satisfy the diverse demands of a constantly changing work place, and to provide a creative synergy between technology and management. Advanced study of core areas of technology is supplemented by track and elective work, allowing students to design individual programs addressing operational, strategic, or policy and reengineering issues. Students may supplement a primary track with an additional track area of study, and/or may supplement technology elective courses with an appropriate MBA course.

Candidates adequately prepared to begin 700-level course work may expect to complete the degree in two to three years, studying part time. The MSITM program is offered in the evenings during the Fall and Spring semesters and two Summer sessions. The normal full time course load for graduate students is nine hours; twelve hours may be taken with permission of the Coordinator.

Prerequisites for Admission

Enrollment in the MSITM Program is open to any qualified person who meets the following requirements: a baccalaureate degree from an accredited institute of higher education, regardless of the undergraduate field of study; evidence of high scholastic ability at the undergraduate level; an acceptable score on the Graduate Management Admission Test (GMAT).

A minimum GMAT score of 450 is required of all students. Under certain conditions, individuals whose score is slightly below 450 may be admitted on the condition that the test be retaken and a minimum score of 450 achieved. Under no circumstances is the student allowed to register for more than 6 credit hours without achieving a minimum score of 450.

Applications for admission to the MSITM Program should be sent to the Coordinator of Graduate Business Programs in the College of Business Administration. The application must include the following: completed application form and application fee; one official transcript from each college or university attended to be sent directly by the college or university to the Coordinator of Graduate Business Programs; official score report of the Graduate Management Admission Test, and three completed recommendation forms. The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by achieving a score of 550 in the Test of English as a Foreign Language (TOEFL) examination.

Applicants are responsible for arranging to take the GMAT and TOEFL and for requesting the Registrar of each college or university to mail one official transcript to the Coordinator of Graduate Business Programs.

General Requirements

The Master of Science in Information Technology degree requires 35 hours of graduate credit beyond any management or technology prerequisite courses that may be necessary.

At this printing, the following is a suggested program of study for new students in the MSITM program. Course descriptions are not available for publication in this issue of the Graduate Bulletin; however, for more information on courses or plan of study, please contact the Coordinator of Graduate Business Programs.

- I. The Ethics/Law Component (2 hours):
 - ITM 701 Ethical Issues in Information Technology Management (1)
 - ITM 702 Information Technology and the Law (2)
- II. The Core Component (18 hours):
 - ITM 711 Information Technology Management Concepts (3)
 - ITM 712 Fundamentals of Database Management Systems (3)
 - ITM 713 Information Technology Infrastructure Concepts and Design (3)
 - ITM 714 Network Design and Management (3)
 - ITM 715 Analysis and Logical Design (3)
 - ITM 716 Decision Support Systems (3)
- III. The Track Component (6 hours chosen in consultation with the Department Chair):
 - Track One: Systems Integration and Telecommunications
 - Track Two: Systems Methodology and CASE
 - Track Three: Reengineering, Change Management and Policy Issues

- IV. The Elective Component (6 hours: choose six hours from another track, or 6 hours of ITM electives, or 3 hours of ITM electives and 3 hours of MBA electives)
- V. The Project Component (3 hours):
ITM 785 Project Management and Practice (3)

Special Requirements

Candidates holding a nonbusiness baccalaureate degree will be required to demonstrate proficiency in the general foundation areas of business administration as well as in mathematics and computer science courses. The foundation course requirements may be satisfied by successfully completing MSITM foundation courses (or their equivalent) shown below. These courses may be taken concurrently with the MCSM courses, or under special circumstances, qualifying examinations may be substituted for the course work.

M.S.I.T.M. Foundation Courses

(Open only to students enrolled in the MSITM Program)

Note: Foundation courses are waived in each subject area for students who have satisfactorily completed equivalent courses prior to admission to the MSITM Program. Acceptable undergraduate equivalents are listed with course descriptions. Course descriptions for the following foundation courses may be found in the *Undergraduate Issue of the Creighton University Bulletin*: CSC 230 Information Systems I; CSC 240 Information Systems II; MTH 141 Applied Calculus or MTH 245 Calculus I.

- MBA 601 Fundamentals of Accounting (3) I**
Foundation course fostering an understanding of accounting and the way it serves in developing useful information about economic organizations. Acceptable undergraduate equivalent: ACC 201 & ACC 202.
- MBA 611 Business Financial Management (3) II**
Analysis of the sources and uses of funds available to business firms, especially corporations; financial analysis; budgeting, and financial planning and control; financial aspects of circulating and fixed asset management. P: ACC 202 or MBA 601 and ECO 203 and ECO 205 or MBA 641. Acceptable undergraduate equivalent: FIN 301.
- MBA 626 Mathematical and Statistical Analysis (4) I**
Introduces students to applications of differential and integral calculus, linear programming, probability theory and regression analysis. P: MTH 135 or equivalent. Acceptable undergraduate equivalent: MTH 141 or MTH 245; and BUS 229.
- MBA 641 Micro- and Macroeconomic Analysis (3) I**
Major micro- and macroeconomic principles and analysis of major economic problems and policies. Acceptable undergraduate equivalent: ECO 203 & ECO 205.
- MBA 662 Fundamentals of Marketing (3) S**
Managerial approach to the study of problems of marketing with emphasis on marketing strategy and development of a marketing mix. P: ECO 203 or MBA 641. Acceptable undergraduate equivalent: MKT 319.
- MBA 684 Fundamentals of Management (3) S**
Evolving study of concepts, theory, research, and operational problems of management. Examination of necessary factors and relationships to establish and achieve organizational objectives: goals, policies, procedures; the planning process; control systems; organizational structure and behavior; leadership. Acceptable undergraduate equivalent: MGT 301.
- MBA 623 Operation Analysis (3) II, S**
Quantitative approaches to the solution of business problems. Current concepts of quantitative analysis, production, and operations analysis for business decisions are emphasized. P: MBA 626 or BUS 229 & MTH 141 or MTH 245. Acceptable undergraduate equivalent: BUS 371.

INTERNATIONAL RELATIONS (INR)

Associate Professor Wise (Program Director); Professors R. Horning, Kneer, Nitsch, and Wunsch; Associate Professors J. Clark, Evans, J. Hoffman, Le Beau, Mihelich, Phillips, Stockhausen, Super, and Welch; Assistant Professor T. Clark.

Program and Objectives

Master of Arts (M.A.) with a Major in International Relations Program

The M.A.I.R. Program is an interdisciplinary program making use of the resources primarily of three departments: Economics, History, and Political Science. The program is designed to be flexible enough to meet the needs of a variety of students and to prepare them for careers in government, the military or business, or to continue on to the Ph.D.

Prerequisites for Admission

Applicants must have had twenty-four hours of undergraduate social science including a course in the fundamentals of economics, a survey course in history, and an introduction to political science course.

The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by a score of 550 in the TOEFL (Test of English as a Foreign Language) examination.

Degree Requirements

Thirty-three semester hours are required for the degree of Master of Arts with a major in International Relations and shall include a core of nine hours: INR 538, International Trade and Finance; INR 602, Proseminar in International Politics; and INR 603, Proseminar in American Diplomatic History. Also required will be INR 790 which is Research Methods in International Relations. The student must take written examinations in two of the following four fields: 1) International Behavior, 2) the United States in World Affairs, 3) Europe in World Affairs, and 4) the Less Industrialized World. Students must take a minimum of one course beyond the core in each of the contributing departments: Economics, History, Political Science. The student must demonstrate at the intermediate level certified proficiency in one modern foreign language or in statistical methods. As evidence of research capability, the student will take INR 799 and defend the research paper before his/her committee.

- INR 508 Development of Political Economy** (3) (See Economics 508.)
- INR 518 Comparative Economic Systems** (3) (See Economics 518.)
- INR 528 International Economic Development** (3) (See Economics 528.)
- INR 537 International Law** (3) (See Political Science 537.)
- INR 538 International Trade and Finance** (3) (See Economics 538.)
- INR 540 Contemporary International Relations** (3) (See History 540.)
- INR 541 War and Society in the Modern World** (3) (See History 541.)
- INR 548 History of the Soviet Union: Its Formation and Fragmentation** (3) (See History 548.)
- INR 562 Foreign Relations of the United States, 1898-1945** (3) (See History 562.)
- INR 563 United States in World Affairs Since 1945** (3) (See History 563.)
- INR 565 The United States and Canada: The Siamese Twins of North America** (3) (See History 565.)
- INR 566 United States and the Middle East Since World War II** (3) (See History 566.)

- INR 570 History of Canada** (3) (See History 570.)
- INR 595 Special Problems in International Relations** (3)
- STUDIES IN INTERNATIONAL RELATIONS — The following courses may include lectures, intensive reading or investigative papers as assigned by the instructor within the framework of the general course title.
- INR 602 Proseminar in International Politics** (3) (See Political Science 602.)
- INR 603 Proseminar in American Diplomatic History** (3) (See History 603.)
- INR 604 Studies in International Relations** (3) (See Political Science 604.)
- INR 605 Studies in International Development Policy** (3) (See Political Science 605.)
- INR 606 Studies in Politics and Development of the Third World** (3)
- INR 607 Problems in African Politics** (3) (See Political Science 607.)
- INR 608 Studies in Civil-Military Relations** (3) (See History 608.)
- INR 609 Studies in Cross Cultural Linguistics** (3)
- INR 610 Studies in The Anthropology of War** (3)
- INR 611 Studies in Political Change** (3) (See Political Science 611.)
- INR 612 Studies in European Politics** (3) OD
- INR 614 Studies in European Diplomatic History Since 1939** (3) (See History 614.)
- INR 617 Studies in International Law** (3) (See Political Science 617.)
- INR 618 Studies in Sociolinguistics** (3)
- INR 631 Studies in Marxism** (3) (See Political Science 631.)
- INR 635 Studies in Russian Diplomatic History** (3) (See History 635.)
- INR 642 Studies in Modern French History** (3) (See History 642.)
- INR 643 Studies in Modern German History** (3) (See History 643.)
- INR 645 Studies in German Foreign Policy Since 1945** (3) (See History 645.)
- INR 651 Studies in United States History II** (3) (See History 651.)
- INR 653 Studies in The United States in Global Politics** (3)
- INR 664 Studies in United States Foreign Relations I** (3) (History 664.)
- INR 665 Studies in United States Foreign Relations II** (3) (See History 665.)
- INR 667 Studies in United States Foreign Relations: Post World War II** (3) (See History 667.)
- INR 668 Studies in United States Foreign Relations: United States and the Middle East** (3) (See History 668.)
- INR 672 Studies in Latin American History** (3) (See History 672.)
- INR 678 Studies in Contemporary Issues in Latin America** (3) (See History 678.)
- INR 680 Studies in Inter-American Relations** (3) (See History 680.)
- INR 684 Studies in Asian Diplomatic History** (3) (See History 684.)
- INR 686 Studies in United States Policy Toward China** (3) (See Political Science 686.)
- INR 687 Studies in the Foreign Policy of China** (3) (See Political Science 687.)
- INR 688 Studies in United States Foreign Relations: United States and the Middle East** (3) (See History 688.)
- INR 689 Studies in Alliance: NATO** (3) OD
- INR 690 Studies in African History** (3) (See History 690.)
- INR 695 Special Problems in International Relations** (3)

SEMINARS IN INTERNATIONAL RELATIONS — The following courses will include investigative papers and research projects assigned by the instructor within the framework of the general course title.

- INR 701 Seminar in Comparative Politics** (3) (See Political Science 701.)
- INR 706 Seminar in Contemporary International Politics** (3) (See Political Science 706.)
- INR 707 Seminar in National Security Policy Seminar** (3) (See Political Science 707.)
- INR 708 Seminar in Political Change** (3) (See Political Science 708.)
- INR 709 Seminar in World Order** (3) (See Political Science 709.)
- INR 710 Seminar in Modern European History I** (3) OD (See History 710.)
- INR 711 Seminar in Modern European History II** (3) OD (See History 711.)
- INR 712 Seminar in European Politics** (3) OD (See Political Science 712.)
- INR 716 Seminar in European Diplomatic History Since 1919** (3) (See History 716.)
- INR 719 Seminar in Modern European History** (3) (See History 719.)
- INR 725 Seminar in Comparative Economic Systems** (3) (See Economics 725.)
- INR 729 Seminar in British History: 20th Century** (3) (See History 729.)
- INR 735 Seminar in Politics of Russia and Its Neighbors** (3)
- INR 737 Seminar in Russian History: 20th Century** (3) (See History 737.)
- INR 747 Seminar in International Law and Organization** (3)
(See Political Science 747.)
- INR 769 Seminar in United States Foreign Relations** (3) (See History 769.)
- INR 773 Seminar in Latin American History** (3) (See History 773.)
- INR 779 Seminar in International Economics** (3) (See Economics 779.)
- INR 780 Seminar in Inter-American Relations** (3) (See History 780.)
- INR 782 Seminar in the History of the Modern Middle East** (3) (See History 782.)
- INR 790 Seminar in International Relations Research Methods** (3)
- INR 792 Internship** (3)
- INR 793 Directed Independent Readings** (3)
- INR 795 Directed Independent Study** (3)
- INR 797 Directed Independent Research** (3)
- INR 799 Research Papers** (3)

JOURNALISM AND MASS COMMUNICATION (JMC)

Associate Professors Flanery (Chair); *Associate Professor* Lashley; *Assistant Professors* Hough and Wirth.

Journalism and Mass Communication is not offered as a graduate major. However, the following Journalism and Mass Communication course may, with the approval of the major adviser, be included as specified in certain graduate degree programs offered by various other departments.

- JMC 529 Law of Mass Communication** (3) I
Legal limitations and privileges affecting publishing and broadcasting; libel, copyright; constitutional guarantees and restrictions on freedom of the press; the FCC, FTC, etc. P: Jr. stdg.

- JMC 565 Hypermedia in the Classroom** (3) S 1994 (Same as EDU 565)
Introduction to hypermedia and its uses in teaching and learning. A review of linear and branched instruction, microworlds, interactive videodiscs, CD-ROM, graphics, Xap Shot, and design of computer-based learning. Course may be repeated to a maximum of six semester hours. P: IC.
- JMC 566 Introduction to Computer Based Learning** (3) OD (Same as EDU 566)
Course designed to acquaint the student with research findings in the area of computer based learning and to explore the principles of effective use of computers in classrooms. Introduction to Hypercard as a vehicle for creating effective computer based learning environments.
- JMC 573 Production of Instructional Videotapes** (3) S (Same as EDU 573)
Workshop designed especially for teachers wanting concentrated "hands on" work in the basic skills of television production. Individuals will learn to produce and shoot instructional programs on the VHS 1/2" format. Emphasis on "hands on" usage of equipment, supplemented by lectures regarding aesthetic and technical production principles.

MATHEMATICS (MTH)

Associate Professor Cheng (Chair); *Professor Mordeson*; *Associate Professors J. Carlson, Fong, and Malik*; *Assistant Professors Crist* (Director of Graduate Studies), *Nair, Newman, Peng, and Wierman*.

Program and Objectives

Master of Science (M.S.) Program

The graduate program in mathematics is designed primarily for students with a bachelor's degree in mathematics. The program consists of applied mathematics, operations research, computer science, and statistics. In order to accommodate students with full-time jobs, the courses making up the program are offered evenings. Courses are offered frequently enough to allow students to graduate in two years.

Program Requirements

For program entry, a bachelor's degree with a major in mathematics is ordinarily expected. A combined score of 1,000 on the Graduate Record Examination will normally be required for acceptance into the program as will a grade-point average of 3.00. The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by a score of 550 in the TOEFL (Test of English as a Foreign Language) examination. Students will be allowed freedom to choose their own area of concentration and adviser. A *Master of Science* degree is offered with a thesis (Plan A) and without a thesis (Plan B). Thirty semester hours of graduate mathematics courses are required with the thesis and thirty-three semester hours without a thesis. Regardless of plan, all graduate students in mathematics are required to include twenty-one semester hours of 600- or 700-level courses. Departmental permission must be received for students to take 500-level mathematics or statistics courses. All degree candidates must pass a written comprehensive examination. In addition to the above requirements, graduate students are asked to follow one of these model plans of study:

- (1) Applied Mathematics: three courses selected from the following (with a grade of B or higher): MTH 623, 635, 643, 651, 683; supporting courses: three graduate mathematics courses and other graduate courses from mathematics, statistics or computer science.
- (2) Engineering Mathematics: MTH 691, 693, 695, 697; support courses: three graduate mathematics courses and other graduate courses from mathematics, statistics or computer science.

- (3) Operations Research: three courses selected from the following (with a grade of B or higher): MTH 653, 671, 672, 675, 685; supporting courses: other graduate courses from mathematics, statistics or computer science.
- (4) Statistics: four courses selected from the following (with a grade of B or higher): STA 625, 663, 667, 675, 683; supporting courses: other graduate courses from mathematics, statistics or computer science.
- (5) Computer Science: three courses selected from the following (with a grade of B or higher): MTH 623, 635, 643, 671, 683, STA 667, STA 675; supporting courses: four graduate level computer science courses and other graduate courses from mathematics, statistics or computer science.

Plans (1), (2) and (3) must include a total of twenty-one semester hours of 600- or 700-level mathematics courses. Plan (4) must include twelve credit hours of 600- or 700-level mathematics courses.

Computer Science 503, 507, 509, 511, 523, and 543 may not be taken for graduate credit in plan (4).

- MTH 509 Discrete Structures** (3) I (Same as CSC 509)
Logic; Boolean algebra; switching circuits; graphs; groups; semi-groups; finite state machines; coding theory; grammars; algorithms. P: CSC 221; 6 hrs. college MTH.
- MTH 521 Euclidean and Non-Euclidean Geometry** (3) II
Basic geometric concepts and applications. P: MTH 246.
- MTH 523 Applied Linear Algebra** (3) I (Same as CSC 523)
Matrix algebra; simultaneous linear equations and determinants; numerical solutions of simultaneous linear equations; leading to computer applications and linear programming. P: 6 hrs. college MTH.
- MTH 525 Automata, Computability, and Formal Languages** (3) II, AY (Same as CSC 525)
Finite state concepts; acceptors; formal grammars; computability; Turing machines. P: MTH 509.
- MTH 529 Linear Algebra** (3) II
Vector spaces and subspaces; linear transformations; matrixes, eigenvalues and eigenvectors. P: MTH 246.
- MTH 543 Numerical Analysis** (3) II
Numerical differentiation and integration; solutions of equations and systems of equations; polynomial approximation; error analysis and eigenvectors; applications to digital computers. P: MTH 246.
- MTH 545 Differential Equations** (3) I
n-th order linear differential equations; nonlinear differential equations; series solutions; Laplace transforms. P: MTH 246.
- MTH 559 Topology** (3) OD
Set theory; metric space; topological spaces; connectedness; compactness; selected related topics. P: MTH 246.
- MTH 561 Mathematical Statistics I** (3) I (Same as STA 561)
Introduction to probability and probability distributions including techniques for finding expected values and variance of discrete and continuous variables. These distributions and their properties are examined to establish their application to applied statistical methods. P: MTH 246.
- MTH 562 Mathematical Statistics II** (3) II (Same as STA 562)
Using probability distributions as a foundation and random sampling, methods for estimating distribution parameters are developed with applications to hypothesis testing. The course also includes an introduction to linear models, regression analysis, analysis of variance and design of experiments. P: MTH 561.
- MTH 563 Mathematical Statistics III** (3) OD (Same as STA 563)
Optimal decision procedures, further normal distribution theory, noncentral chi-square and F distributions, introduction to the theoretical basis for analysis of variance, nonparametric methods. P: MTH 562.

- MTH 571 Linear Programming (3) II** (Same as STA 571)
Introductory course in operations research. Linear models and solutions using the simplex method, duality theory and sensitivity analysis. P: MTH 523 or 529.
- MTH 573 Probabilistic Models (3) II AY** (Same as STA 573)
Queuing theory, inventory theory, Markov processes, simulation and nonlinear programming. P: MTH 561.
- MTH 575 Introductory Stochastic Processes (3) II AY** (Same as STA 575)
Random walk, normal processes and covariance stationary processes, counting processes and Poisson processes, renewal counting processes, discrete and continuous parameter Markov chains. P: MTH 561.
- MTH 581 Modern Algebra I (3) I**
Groups, rings; fields; applications to coding theory. P: MTH 246.
- MTH 582 Modern Algebra II (3) II**
Rings; ideals; field extensions; Galois theory; applications to coding theory. P: MTH 581.
- MTH 583 Fuzzy Set Theory (3) II**
Crisp sets; fuzzy sets; classical logic; fuzzy logic; fuzzy complement; fuzzy union; fuzzy intersection; crisp and fuzzy relations; similarity relations; compatibility relations; orderings; morphisms; fuzzy relational equations. P: MTH 246.
- MTH 591 Analysis I (3) I**
Properties of Euclidean spaces and their applications to functions. P: MTH 246.
- MTH 592 Analysis II (3) II**
Continuation of MTH 591; functions in metric space. P: MTH 591.
- MTH 599 Seminar (1-3) OD**
Algebraic geometry; applications to robotics; fuzzy mathematics. P: MTH 581.
- MTH 613 Chaos Theory (3) OD**
Periodic points, one-dimensional chaos, two-dimensional chaos, fractals.
- MTH 623 Numerical Analysis: Linear (3) IAY** (Same as CSC 623)
Linear systems of equations; Gaussian elimination; error analysis and norms; Jacobi's method; Gauss-Sidel method; overrelaxation; computation of eigenvalues and eigenvector; Householder's method.
- MTH 635 Coding Theory (3) I, 1995-96, AY** (Same as CSC 635)
Weight, minimum weight; maximum-likelihood decoding; syndrome decoding; perfect codes; Hamming codes; sphere-packing bound; self-dual codes; Golay codes; B.C.H. code; cyclic codes.
- MTH 643 Numerical Analysis: Nonlinear (3) OD** (Same as CSC 643)
Numerical differentiation and integration; solutions of equations and systems of equations; polynomial approximations; error analysis and eigenvector, applications to digital computers. P: MTH 246.
- MTH 651 Partial Differentiation Equations With Applications (3) OD**
Parabolic, hyperbolic and elliptic partial differential equations (PDEs) are introduced using physical examples; analytic solution of PDEs; techniques of Fourier analysis; numerical methods for solving PDEs with computers.
- MTH 653 Reliability Theory (3) I, OD** (Same as STA 653)
Structured properties of coherent systems; reliability of coherent systems; classes of life distributions based on notions of aging; maintenance and replacement models; models; limiting distributions of coherent systems life.
- MTH 657 Matrix Theory (3) OD**
Matrix algebra; determinant theory; Jordan Canonical form; functions of matrices; inner product; normal matrix; unitary matrix; positive definite matrix; non-negative matrices; stochastic matrices; generalized inverses.
- MTH 663 Applied Time Series Analysis (3) OD** (Same as STA 663)
Stochastic processes; auto-covariance functions; estimation in auto regressive and moving average processes, the spectrum; spectral estimator. P: MTH 562 or equiv.

- MTH 669 Functional Analysis** (3) OD
Normed linear spaces; Banach spaces; inner product spaces; Hilbert spaces; spectral theory.
- MTH 675 Stochastic Processes** (3) II, AY (Same as STA 675)
Normal processes; covariance stationary processes; counting processes; Poisson processes; renewal counting processes; Markov chains. P: MTH 562 or equiv.
- MTH 683 Fuzzy Mathematics** (3) I, 1994-95 (Same as CSC 683)
Crisp sets; fuzzy sets; classical logic; fuzzy logic; operations of fuzzy sets; fuzzy relations; fuzzy measures; uncertainty and information; application to management and decision making; computer science; systems science.
- MTH 685 Control Theory** (3) I, 1995-96
Structural properties of linear systems; structural properties of nonlinear systems; optimal control; infinite dimensional systems.
- MTH 691 Nonlinear Elasticity** (3) I, 1994-95
Introductory material covers the general theory of elasticity, including strain-displacement equations, stress-strain laws, and linear theory (i.e., Hook's Law). Other topics include nonlinear integro-differential equations used to model the behavior of strings and beams (Fopple Theory, Von Karman assumptions), circular membranes, and the buckling of plates.
- MTH 693 Fluid Mechanics** (3) S 1994
Introductory material will cover the general theory of fluid mechanics, including the Navier-Stokes equations; vorticity; the Bernoulli equation; potential theory and conformal mapping. Other topics include flow past circular cylinders, spheres, airfoils, and bubbles; inverse methods and numerical methods.
- MTH 695 Hyperbolic Conservation Laws** (3)
Basic theory of hyperbolic conservation laws-examples from gas dynamics. Formation, propagation and interaction of shock waves and rarefaction waves, and the numerical methods used to model them.
- MTH 697 Methods of Applied Mathematics** (3)
Course covers several topics used extensively in applied mathematics. Topics will be drawn from, but not limited to, the following: (a) the theory of complex functions, including contour integrals (calculus of residues), (b) asymptotic expansions, (c) regular and singular perturbation theory.
- MTH 701 Advanced Topics in Operations Research** (3) OD
Topics from operations research. P: MTH 671.
- MTH 703 Advanced Topics in Operations Research** (3) OD
Graph theory; abstract algebra.
- MTH 781 Abstract Algebra I** (3) OD
Equivalence relations; monoids and groups; quotient groups; homomorphisms; rings; field of fractions; polynomials; modules.
- MTH 782 Abstract Algebra II** (3) OD
Galois theory, splitting field, finite fields, real polynomial equations and inequalities; elimination procedure; resultants. P: MTH 781.
- MTH 791 Real Analysis I** (1) OD
Set theory; real number system; Lebesgue measure; Lebesgue integral; differentiation and integration; classical Banach spaces.
- MTH 792 Real Analysis II** (3) OD
Metric spaces; topological spaces; compact spaces; general Banach spaces; general measure and integral; Daniell integral.
- MTH 793 Directed Independent Readings** (3) OD
- MTH 795 Directed Independent Study** (3) OD
- MTH 797 Directed Independent Research** (3) OD
- MTH 799 Master's Thesis** (3) OD

MEDICAL MICROBIOLOGY AND IMMUNOLOGY (MIC)

Professors Nairn (Chair), Chartrand, Dworzack, Goering, Knoop, O'Brien, Preheim, C. Sanders, W. E. Sanders, Jr., Severin and Townley; *Associate Professors* Agrawal, Bittner, Cavalieri, Chaperon, Gentry, and Harrison; *Assistant Professors* Ehrhardt, Giger, Gorby, Hanson, Horowitz, Lister, Romero, L.L. Safranek, and Thomson; *Clinical Professor* Gendelman; *Assistant Clinical Professors* Dominguez, Penn, Rupp, T. J. Safranek, Swindells, and Wiley; *Professor Emeritus* Ferraro.

Programs and Objectives

Programs are offered that lead to the M.S. and Ph.D. degrees. Both emphasize training in areas that are immediately relevant or applicable to medicine. Students are encouraged first to acquire a breadth of knowledge in the major disciplines of medical microbiology, and then to concentrate in the more specialized areas of microbiology, including microbial pathogenicity, infectious diseases, antimicrobial agents and chemotherapy, immunology, molecular genetics, virology, microbial physiology, or epidemiology.

Doctor of Philosophy (Ph.D.) Program

The objective of the program is to prepare highly qualified students for a broad range of possible careers in research and teaching in Medical Microbiology and Immunology and related health science fields.

Master of Science (M.S.) Program

The objectives of the program include preparation of the student for one or more of the following careers: (1) teaching of Medical Microbiology and Immunology at the undergraduate level, (2) participation in supervised or team research in universities, industry or government, or (3) supervision of diagnostic microbiology laboratories in community hospitals or local health departments. In addition, the program will prepare outstanding students for pursuit of the Ph.D. degree.

Prerequisites for Admission

The student's academic record will be a major factor in acceptance. The undergraduate curriculum must include fundamental courses in both the biological and physical sciences. Additional advanced courses in biology and chemistry are strongly recommended. Courses in physics and mathematics are also advisable. However, lack of advanced courses in these areas will not necessarily preclude consideration for admission to the graduate program. The applicant is required to submit the results from the Graduate Record Examination (GRE) prior to admission.

General Requirements

The minimum required curriculum for the M.S. degree, which is usually completed in two full years, is thirty semester hours of graduate credit, including twenty-two hours of formal courses and six hours of thesis research. For the Ph.D., an additional sixty semester hours are required, twenty-four of which are to be in research and thesis work. The student must maintain a B (3.0) average throughout his/her graduate career.

Special Requirements

Among the formal courses, MIC 615 — Medical Microbiology and Immunology is required of all graduate students. The requirements for the M.S. degree include proficiency in one foreign language (French, German, Russian, or Spanish), or BIO 401

— Biometry, or some other research tool. BCH 521 — Principles of Biochemistry is acceptable in the degree plan. One language and a research tool are required of Ph.D. candidates. All students must complete a sequence of core courses before graduation. During the 1996-97 academic year the Department proposes to substantially revise the graduate program. Students should consult with the Graduate Program Director to obtain an updated list of courses and requirements.

The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by a score of 550 in the TOEFL (Test of English as a Foreign Language) examination.

- MIC 543 Essentials of Immunology (3) II**
Lecture course covering the major areas of contemporary immunology including host resistance to infection, the chemistry of antigens and physiology of the immune system, immunogenetics and transplantation immunology, immunological techniques, tumor immunology, and immunopathology. 3 R&L. P: MIC 141 or IC.
- MIC 611 Perspectives in Medical Microbiology and Immunology (2) I**
Orientation course for new graduate students including history of microbiology, philosophy of science, familiarization with research problems, methods of literature search and seminar preparation. Primary purpose is to assist students in planning their graduate programs.
- MIC 615 Medical Microbiology and Immunology (5) I**
Basic instruction in the biology of microorganisms, host-parasite relationships, infectious diseases, immunobiology and immunopathology, bacteriology, virology, parasitology, mycology, molecular genetics, and antimicrobial agents and chemotherapy. Required of all graduate students. 5 R&L arr.
- MIC 617 Molecular Biology (3) I**
Contemporary concepts and techniques in molecular biology including gene structure, coding, regulation, protein synthesis, mutation, recombination, recombinant DNA technology and transposable elements. P: BIO 212 or MIC 615 or IC.
- MIC 619 Molecular Biology Laboratory (2) II**
Demonstration of laboratory techniques related to molecular biology. P or CO: MIC 617.
- MIC 727 Methods in Medical Microbiology and Immunology (3) I, AY**
Study of modern methods of bioinstrumentation as related to medical microbiology. Laboratory and group discussion dealing with the assay of bacterial components and bioactive products.
- MIC 731 Medical Parasitology (3) II, AY**
Emphasis on the protozoa, helminth, and arthropod parasites of importance in human disease. Review of current and recent literature emphasizing experimental work in the medical or public health fields. 3R; L arr. P: IC.
- MIC 733 Mechanisms of Microbial Pathogenicity (4) I, AY**
Lectures, seminars, literature review, and group discussion concerning mechanisms by which microorganisms produce disease. P: MIC 615 or IC.
- MIC 735 Diagnostic Microbiology (4) II, AY**
Laboratory and conferences which deal with selection of clinical specimens for diagnosis, isolation of pathogenic microorganisms and preparation of media for their growth. 4 R. L arr. P: IC.
- MIC 737 Recent Developments in Immunopharmacology (3) II**
The antigen-antibody reaction with its effects on the mast cell, the release of chemical mediators, and the effect of these mediators on various tissue functions both *in vivo* and *in vitro*. The various therapeutic agents and mechanisms that influence these reactions. P: IC.
- MIC 739 Microbial Physiology (4) II, AY**
Study of molecular and sub-cellular processes in microorganisms. Includes molecular structure and function, cell division, synthesis of macromolecules, and metabolism. 4R. L arr. P: IC.
- MIC 745 Techniques in Immunobiology and Immunochemistry (2) I, II, S**
Demonstration and practice in techniques of modern immunology. 2 R&L arr. P: MIC 543 or IC.

- MIC 746 Advanced Immunology (3) I, AY**
Lectures and conferences providing a coordinated and detailed account of current immunology at an advanced level. Students will be expected to familiarize themselves with the original literature, and emphasis will be given to the more rapidly progressing areas. 3 R&L arr. P: MIC 543 or IC.
- MIC 749 General Virology (4) I, AY**
Study of the physical, chemical, and biological properties of viruses. Selected topics will include such areas of investigation as cultivation and identification, replication, host-virus interactions, interference, and viral oncogenesis. P: MIC 615 or IC.
- MIC 751 Epidemiology and Public Health (3) II, AY**
Study of infectious diseases in population and methods of control including microbiology of food and water. P: IC.
- MIC 753 Antimicrobial Agents and Chemotherapy (4) I, AY**
Chemistry, pharmacology, and biology of antibiotic substances and their use in therapy of infectious diseases. P: MIC 615 or IC.
- MIC 754 Clinical Infectious Disease (1-4) S**
Clinical, diagnostic and pathogenic aspects of infectious diseases taught in the hospital setting. Students participate in ward rounds, seminars, discussions and lectures. Problem-solving techniques involving use of clinical and laboratory evidence. P: IC.
- MIC 757 Extrachromosomal Inheritance (3) II, AY**
The study of extrachromosomal genetic elements (e.g., plasmids, transposons, insertion sequences, bacteriophages, etc.) at the molecular and cellular level. Examination of interactions between microorganisms and extrachromosomal elements in their overall relationship to Medical Microbiology and Immunology including infectious disease, antimicrobial agents, and chemotherapy. P: IC.
- MIC 759 Medical Mycology (3) II, AY**
Systematic mycology, methods of cultivation, growth, morphology and study of life cycles of the representative members of various taxa. Identification of human pathogenic fungi. Mycotoxins, measurements of fungitoxicity and antifungal agents. 3 R. L arr. P: IC.
- MIC 769 Education in Medical Microbiology and Immunology (1) I**
Supervised experience in student counseling and in preparation of lectures, teaching aids, and problem-solving examinations. Optional for Yr.-1 Ph.D. students; required annually thereafter.
- MIC 791 Department Seminar and Teaching (1) I, II**
The student is required to register each semester of his residence. The maximum credit applicable toward a degree is two for the M.S.; six for the Ph.D.
- MIC 793 Directed Independent Readings: Selected Topics in Medical Microbiology and Immunology (2) I, II**
Conferences and reading assignments providing an opportunity for in-depth study of recent developments and associate problems in carefully selected and highly specialized areas of medical microbiology.
- MIC 797 Directed Independent Research (2-6) I, II, S**
Investigative work on selected subject. (Non-thesis research optional). L&R arr.
- MIC 799 Master's Thesis (3) I, II, S**
Research, under departmental supervision, in connection with the preparation of the Master's thesis. Student must register for this course in any term when engaged in formal preparation of the Master's thesis; however, six credit hours are the maximum applicable toward the degree.
- MIC 893 Directed Independent Readings: Selected Advanced Topics in Medical Microbiology and Immunology (4) I, II**
Advanced investigative work on a selected subject. L&R arr. P: DC.
- MIC 897 Directed Independent Research (2-6) I, II, S**
Investigative work on a selected subject.

MIC 899 Doctoral Dissertation (3-6) I, II, S

Research, under departmental supervision, in connection with the preparation of the doctoral dissertation. Student must register for this course in any term when engaged in formal preparation of the doctoral dissertation; however, twenty credit hours are the maximum applicable toward the degree.

MODERN LANGUAGES

Associate Professor G. Carlson (Chair, Department of Classics/Modern Languages); *Professor* Gommermann; *Associate Professor* Coffey (Coordinator of Modern Languages); *Assistant Professors* Carroll, Gibbs, Kestermeier, Recio, Rodrigo, Romero-Downing, Snyder and Vanderboegh.

Modern Languages are not offered as graduate majors. However, the following Modern Language courses may, with the approval of the major adviser, be included as specified in certain graduate degree programs offered by various other departments.

Prerequisites for Graduate Study with French, German, or Spanish as a minor in Plan B Programs

An undergraduate minor or equivalent in French, German, or Spanish.

Teacher certification: Students who intend to teach languages should consult with the Education Department and with the appropriate agency in the state in which they intend to teach.

FRENCH (FRN)

FRN 522 French Civilization Before the French Revolution (3) OD

Study of the history, philosophical movements, and general cultural developments in France from the earliest times until 1789. P: One 300-level FRN course or IC.

FRN 524 French Civilization After the French Revolution (3) OD

Study of the history, philosophical movements, and general cultural developments in France from 1789 to the present time. P: One 300-level FRN course or IC.

FRN 540 French Literature: Middle Ages (3) OD

Study of the texts and literary movements of the Medieval period. Introduction to some of the older works in the original language. P: One 300-level FRN course or IC.

FRN 542 French Literature: Renaissance (3) OD

Study of the texts and literary movements of the 16th century. Readings from Rabelais, Montaigne, Ronsard, DuBellay and others. P: One 300-level FRN course or IC.

FRN 543 French Literature: 17th Century (3) OD

Study of the texts and literary movements of 17th century France. Readings from Malherbe, Corneille, Descartes, Pascal, Racine, La Fontaine, La Rochefoucauld and others. P: One 300-level FRN course or IC.

FRN 544 French Literature: 18th Century (3) OD

A study of the texts and literary movements of 18th century France. Readings from Montesquieu, Voltaire, Diderot, Chénier, Rousseau and others. P: One 300-level FRN course or IC.

FRN 548 French Literature: 19th Century (3) OD

From "La Genie du Christianisme" to Naturalism; the most important literary movements; Romanticism, Parnasse and Symbolism (poetry). History, the Critics, Realism and Naturalism. From Hugo to Loti and France. P: One 300-level FRN course or IC.

FRN 549 French Literature: 20th Century (3) OD

Study of texts and literary movements from the turn of this century to the present with texts chosen to give both a depth and breadth of understanding for this period. P: One 300-level FRN course or IC.

FRN 557 French Poetry (3) OD
Close examination and study of selected works from the Middle Ages to the present. P: One 300-level FRN course or IC.

FRN 564 History of the French Language (3) OD
The development of the French language; general linguistic principles, the Celtic substrata, the Latin base, the various substrata, from the earliest to modern times. P: One 300-level FRN course or IC.

GERMAN (GER)

GER 511 German Civilization and Culture of the Middle Ages (3) OD
Development in language, social structure, religion, philosophy, education, art, architecture from the Germanic Era to the Renaissance. P: One 300-level GER course or IC.

GER 513 German Civilization and Culture from the Reformation to German Romanticism (3) OD
Developments in art, architecture, music, literature, religion, language, education, social structures during the Reformation, Baroque, Enlightenment and Classic Periods. P: One 300-level GER course or IC.

GER 515 German Civilization and Culture from the Creation of the Second German Empire to the Foundings of the Federal and Democratic Republics (1848-1948) (3) OD
Investigation of the interdependence between the historical development and cultural phenomena prior to the foundation of the "Kaiserreich" up to the establishment of the two German Republics. Particular attention devoted to the relationship of history and selected topics in literature, art, architecture, and music. P: One 300-level GER course or IC.

GER 521 German Literature from Middle Ages to the Reformation (3) OD
Reading and discussion of representative authors and selections of their works (Hildebrandslied, Nibelungenlied, Parzival, Tristan und Isolde, The Plowman from Bohemia, Martin Luther). P: One 300-level GER course or IC.

GER 527 German Literature of the 19th Century (3) OD
Reading and discussion of representative movements (Classicism, Romanticism, Realism, and Naturalism), their major authors and works. P: One 300-level GER course or IC.

GER 529 Contemporary German Literature (3) OD
Discussion of 20th century German literary movements and critical study of selected contemporary major works such as 'Novelle', drama, lyrics, and short stories. P: One 300-level GER course of IC.

GER 531 German Romanticism: Literature, Art, and Music (3) OD
Study of authors and literary masterworks of German Romanticism and examination of the relationship of romantic literature, art, and music. P: One 300-level GER course or IC.

GER 541 German Narrative Prose (3) OD
Reading and discussion of various literary forms of major German works written in prose. P: One 300-level GER course or IC.

GER 543 German Drama (3) OD
Development of the German drama from the 18th century to the present: Lessing, Goethe, Schiller, Kleist, Hebbel, Hauptmann, Kaiser, Brecht, Dürrenmatt and others. P: One 300-level GER course or IC.

GER 545 German "Novelle": 19th and 20th Centuries (3) I 1996-97
Study of the development and tendencies of the German short novels in the nineteenth and twentieth centuries. P: One 300-level GER course or IC.

LINGUISTICS

LNG 511 General Linguistics (3) OD
The nature of language; sound and symbol; dialect and language; the languages of the world; methods and disciplines of modern linguistics; phonetics; morphology; syntax; lexicology; the comparative method and related topics.

SPANISH

- SPN 544 Spanish Peninsular Narrative (3) OD**
A study of representative narrative texts from the late nineteenth and the twentieth centuries. P: SPN 311 or SPN 312 or IC.
- SPN 550 Literature of the Colonial Period (3) OD**
Study of the major works from Columbus to Juana Inés de la Cruz. P: SPN 311 or 312 or IC.
- SPN 551 Latin-American Novel (3) OD**
An introduction to the Latin-American novel, literary movements and techniques focusing on major writers such as García Márquez, Vargas Llosa, Luisa Valenzuela, Isabel Allende, etc. P: SPN 311 or SPN 312 or IC.
- SPN 552 The Latin-American Short Story (3) OD**
Study of the Latin-American short narrative from the nineteenth century to the present. Selected stories by Echeverría, García Márquez, Rosario Ferré, Elena Poniatowska, Julio Cortázar, Jorge Luis Borges, and others. P: SPN 311 or SPN 312 or IC.
- SPN 554 Twentieth Century Latin-American Poetry (3) OD**
A study of Latin-American poetry from the Vanguardista period to the contemporary scene. P: SPN 311 or SPN 312 or IC.
- SPN 555 Twentieth Century Latin-American Theater (3) OD**
A study of Latin-American theater from the end of the nineteenth century to the present. P: SPN 311 or 312 or IC.
- SPN 541 Medieval Spanish Literature (3) OD**
Course provides an insight to the most important writings of the Spanish Middle Ages and focuses on the three masterpieces of the period (Mío Cid, Libro de Buen Amor and La Celestina), but also emphasizes other poetic genres such as ballads and cancioneros. P: SPN 311 or SPN 312 or IC.
- SPN 542 Golden Age Literature (3) OD**
A study of the major literary figures of the Spanish Golden Age (16th and 17th centuries) such as Garcilaso, Quevedo, Cervantes and others. P: SPN 311 or SPN 312 or IC.
- SPN 548 The Generation of 1898 (3) OD**
Reading and analysis of the major works of the following novelists and nonfiction writers: Unamuno, Valle-Inclán, Baroja, and Azorín. P: SPN 311 or SPN 312 or IC.
- SPN 549 Twentieth Century Spanish Drama (3) OD**
Reading and analysis of plays by the following dramatists: García Lorca, Casona, Buero Vallejo and others. P: SPN 311 or SPN 312 or IC.
- SPN 557 Contemporary Spanish Poetry (3) OD**
A selection of works and styles of the nineteenth and twentieth centuries. P: SPN 311 or SPN 312 or IC.

MOLECULAR BIOLOGY

See Department of Biomedical Sciences

NATURAL SCIENCE (NSC)

Administered by the Department of Physics

Natural Science is not offered as a graduate major. However, the following Natural Science courses may, with the approval of the major adviser, be included as specified in certain graduate degree programs offered by various other departments.

- NSC 505 Workshop in Earth Sciences (3) OD (Same as PHY 505)**
Intensive workshop for teachers and teacher education students, providing practice in preparing and using materials for teaching topics in earth sciences: geology, meteorology, oceanography, climatology, hydrology, and astronomy.

- NSC 506 Workshop in Environmental Education (1) S** (Same as EDU 506)
Advanced Project WILD. Special topics in the teaching of environmental education for those who have participated in a Project WILD or Aquatic WILD workshop. May be repeated to a limit of three semester hours.
- NSC 541 Atmospheric Diffusion, Air Pollution, and Environmental Impact Analysis(3) OD**
(Same as ATS 541)
Survey of the theoretical and practical aspects of diffusion, dispersion, and turbulent transport of pollutants in an atmospheric boundary layer. Includes observational and instrumentation techniques; plume-rise models; regional pollution transport; and diffusion from point, line, and area sources. Chemical and physical transformations of the pollutants, precipitation scavenging, and dry deposition are studied. Reviews Federal environmental laws, air quality standards, environmental impact assessments, ethics, and guidelines for writing environmental impact statements. P: NSC 113 or equiv.
- NSC 544 Hydrology (3) I** 1994-95 (Same as ATS 544)
Study of the waters of the earth, especially with relation to the effects of precipitation and evaporation upon the occurrence and character of water in streams, lakes, and on or below the land surface. In terms of hydrologic cycle, the scope of this course may be defined as that portion of the cycle from precipitation to reevaporation or return of the water to the seas. P: NSC 113 or 231.
- NSC 556 Introduction to Physical Oceanography (3) OD** (Same as ATS 556)
Geomorphology of the ocean bottom; properties of sea water; salinity and temperature distributions; major ocean currents and circulations; equations of motion, horizontal wind-driven currents; thermohaline circulations; wind waves and swell.

NEUROBIOLOGY

See Department of Biomedical Sciences

NURSING (NUR)

Professors Norris (Program Director), Braden, and Pinch; *Associate Professors* Lappe, Kunes-Connell and Lazure; *Assistant Professors* Ciciulla, DeMartinis, Furlong and Hogenmiller; *Assistant Clinical Professor* Dowell.

Program Description

Master of Science (M.S.) Program

A program of graduate study in nursing is offered leading to the degree of *Master of Science (M.S.)*. Emphasis is placed on preparing graduates with advanced clinical competencies and specialized role knowledge to meet the demands of the changing health care environment. Students complete core requirements, a clinical focus (in adult health, family or neonatal intensive care nursing), and a role option (nurse manager, educator, clinical specialist or practitioner). Program is accredited by the National League for Nursing (NLN).

Graduate study in nursing integrates nursing practice, issues, theories, science, roles and research. It is designed to assist the professional nurse to respond to problems in nursing practice and in the health care system and to respond to the need for change. Intensive study focuses on health promotion, health maintenance, and achievement of optimum levels of function in the presence of disease or disability. The program affords opportunities to develop collegial relationships with other health team members and to address key aspects of cost, quality and continuity of care in the delivery system.

Purpose

The purpose of the M.S. in Nursing program is to prepare nurses for advanced clinical practice and roles as nurse educators, managers, clinical specialists or practitioners. Graduates are capable of improving health care through selectively contributing to the development of nursing practice, theory and science and are prepared to participate as nurse consultants, collaborators, and change agents in health-care systems and schools of nursing.

Prerequisites for Admission

Applicants for admission to the graduate program in nursing must meet the following requirements:

1. Have a *Bachelor of Science* degree with a major in nursing from an NLN accredited college or university.
 2. Have a cumulative G.P.A. of 3.00 on a 4.0 scale.
 3. Have a current nursing license in the State of Nebraska.
 4. Submit evidence of acceptable Graduate Record Examination (GRE) combined scores on the verbal and quantitative components.
 5. Successful completion of undergraduate courses in Statistics and Physical Assessment or equivalent.
 6. Submit three recommendations from persons able to evaluate the applicant's current and potential competency in nursing and academic potential.
 7. Submit an official transcript of all previous academic work at the collegiate level.
 8. Professional nursing practice experience is recommended.
- Applicants who do not meet the above criteria will be considered on an individual basis.

NOTE: The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by a score of 550 in the TOEFL (Test of English as a Foreign Language) examination.

Degree Requirements

The requirements for the *Master of Science* degree with a major in nursing are a minimum of 36-45 semester hours of course work taken at the graduate level. (Students in the articulated B.S.N. to M.S. curriculum have the option of substituting NUR 605 and 789 for the related undergraduate courses in issues and research. (These courses will be waived at the graduate level if the student achieves a grade of B or better in each and pursues graduate study within two years.) Each student will complete a sequence of core courses (20 sem. hrs.), clinical courses (9-10 sem. hrs.) and role option courses. Students who elect to complete a thesis and one elective complete 41 sem. hrs. of requirements. Students who elect the nonthesis option and nurse practitioner students complete 45 sem. hrs. of requirements.

Nursing Core: NUR 602 or 603, 605, 607, 609, 651, 789, and 790.

Clinical Focus:

- Family Nursing — NUR 611, 613, and 616 or 617
- Adult Nursing — NUR 611, 643, and 653 or 654
- Neonatal Intensive Care Nursing — 611, 613, and 618

Role Development Options:

- Nurse Manager — NUR 621, 625 (may request waiver of core courses 603 and 651 to use substitutions and electives to build up to five courses in the College of Business Administration as a secondary focus)

Nurse Educator — NUR 631, 635

Clinical Nurse Specialist — NUR 661, 665

Nurse Practitioner — NUR 604 or 612, 608 or 610, 661, 606 or 614, 794 (family) or 796 (adult), or 793 (neonatal ICU)

Thesis/nonthesis Options:

Advanced practice students may choose to do a thesis (NUR 799) and take one elective or do no thesis and take three electives*. (Nurse practitioner students have no required thesis and no electives.)

* Electives are three semester hour graduate-level courses appropriate to the student's clinical focus or role and approved for the plan of study.

NUR 601 Psychosocial Assessment (3) OD

Theory and practicum in the assessment and evaluation of the psychosocial status and needs of individuals across the lifespan. Emphasis on acquiring knowledge of psychosocial development, skills of interviewing and helping, and cultural awareness. Elective.

NUR 602 Neonatal Assessment (3)

Incorporates knowledge of perinatal history taking, physical exam and common technologic procedures in assessment of gestational age, APGAR score, neuromotor development, with preceptored practicum experiences in doing assessments of normal and high risk neonates (2 semester hour didactic/45 contact hours of practicum experiences).

NUR 603 Advanced Health Assessment (3) I, II

Theory and practice of advanced health assessment and evaluation. Builds on prior knowledge of history and physical examination to develop competencies for primary evaluation of health status. One credit of laboratory practice (45 contact hours) is included. P: Undergraduate physical assessment content.

NUR 604 Advanced Health Assessment Practicum (2) II, S

A two credit practicum designed to assist nurse practitioner students to increase their health history and assessment skills in a practice setting. The 90 contact hour practicum experience will take place in public or community health clinics where NP students will perform complete histories and physical examinations on clients of all ages and in laboratory settings, all under the direct supervision of nurse practitioners or primary care physicians. P: NUR 603.

NUR 605 Health Care Issues (3) II, S

An analysis of health care policy and its impact on the consumer and the profession of nursing in relation to the delivery of health care. Historical, current and future trends are investigated.

NUR 606 Pharmacotherapeutics (3) I

Pharmacotherapeutic effects and clinical uses of specific drug groups as relevant to primary health care. Pharmacological mechanisms associated with drug interactions, incompatibilities, side effects, contraindications and patient education are discussed as a basis for clinical judgments in managing patients with common, acute and stable, chronic conditions. Designed to meet requirements for nurse practitioners to practice with prescriptive privileges.

NUR 607 Health Care Theories (3) I

Consideration of theories of nursing, the supporting sciences, health, and health care. Special emphasis is placed on the interrelationships between theory, practice, and research; the levels of theory development; the need for and the uses of theories; criteria used to evaluate theories; and the process of theory development.

NUR 608 Episodic Care (4) II

Designed for all nurse practitioner students. Didactic and practicum (90 contact hours) experiences focusing on the diagnosis and treatment of simple, acute illnesses and conditions of patients of all ages. Practica will be in primary and urgent care settings under the direction of nurse practitioners and/or physicians. P: NUR 603, 604, 651, 606.

- NUR 609 Computer Analysis of Data for the Health Sciences (3) S**
 Course combines the use of a computer and SPSS-X software with applications for statistical analyses. Objectives consist of acquiring proficiency at selecting statistical tests for different research problems, using the computer to execute the most common statistical tests, and interpreting the results of those tests. P: Undergraduate statistics.
- NUR 610 Management of High Risk Neonates (4)**
 Didactic content (2 semester hours) and preceptored clinical practicum experiences (90 contact hours) in management of common cardiovascular, gastrointestinal, metabolic, endocrine, hematological, renal, neurological and infectious disorders. P: NUR 612, 614.
- NUR 611 Health Promotion (3 or 4) I**
 Introduction to nursing assessment, motivation and collaborative planning strategies designed to promote health, wellness and self-care capacity of individuals and families. Health promotion research is incorporated. Specific applications will be emphasized for family and adult health majors. Two credit hours of didactic instruction will be provided. Nurse practitioner students will also complete two credit hours (90 contact hours) of health promotion practicum experiences under the direct supervision of a nurse practitioner or physician. FNP student experiences will emphasize school age, perinatal and women's health settings. ANP students will address needs of adults and special populations. Nonpractitioner students will complete a one credit (45 contact hours) practicum providing screening, health promotion and preventive care for an individual or family and participate in a support group under the guidance of a qualified group preceptor. P: NUR 603.
- NUR 612 Neonatal Assessment and Diagnostic Practicum (2)**
 Preceptored practicum applying knowledge of assessments, radiological evaluation, laboratory interpretation and diagnostic reasoning for normal and high risk neonates. Students will identify nutritional needs, respiratory distress, apnea, cardiovascular, nutritional, gastrointestinal, hematological, renal, sensory, neurological and infectious disorders (90 contact hours.) P: NUR 602.
- NUR 613 Family Focused Care (3) II**
 Designed for the study and application of principles of family-focused care. Emphasis is given to events or situations that threaten, challenge, or disrupt the family system. The focus is on advanced intervention models or protocols for family health maintenance and restoration in the care of families at risk because of chronic illness, major transitions or common family problems. Practicum activities (45 contact hours) will include a focus on the family system, family and community as client, and use of education and support groups. FNP students are to care for individuals and families coping with chronic illness under the direct supervision of a FNP or family practice physician. (NICU nurse practitioners select families of high risk neonates.) P: NUR 603, 651.
- NUR 614 Pharmacotherapeutics for Neonatal Intensive Care (3)**
 Principles of pharmacology, implications for nutrition, pain management, medications in ventilation therapy, drug administration for neonates and effects of prenatal substance abuse are discussed.
- NUR 615 Family in the Community (3) OD**
 An elective course designed for students who plan to work in public/community health nursing. Incorporates principles of epidemiology and public health science with investigation of the structure and goals of community health, community assessment, and community diagnosis to identify problems of families within the community. Exploration of the formulation of activities or programs to improve the overall quality of health within the community. P: NUR 611.
- NUR 616 Clinical Management of Family Care (3) S**
 Family nurse practitioner students will manage the prenatal care and health needs of child rearing families; and assess, diagnose and treat simple acute and stable chronic illnesses in patients of all ages under the direction of family nurse practitioners and/or primary care physicians (135 contact hours). P: NUR 603, 604, 606, 608, 611, 613, 651.
- NUR 617 Family Nursing Practicum (3) S**
 Advanced practice students will assess and manage comprehensive care needs of selected families and target groups in the community under the direction of community health nurse faculty (135 contact hours). Clinical conferences will address the theory and research base of selected interventions. P: NUR 603, 611, 613, 651.

- NUR 618 Care of High Risk Neonate Practicum (3)**
Application of principles of assessment and management of the care of high risk neonates (135 contact hours) under the direction of a preceptor (NICNP or neonatologist). P: NUR 610, 612, 614.
- NUR 621 Fundamental Principles of Management (3) II**
Study of organizational theories and behavior related to health care settings. Focuses on contemporary models of delivery, organizational communication, motivation and critical thinking to achieve optimal quality care in a cost effective manner.
- NUR 625 Management Practice (1-2) I**
Examination of legal and ethical issues pertinent to nursing management in a managed care environment. Application of theory in design and implementation of a change project including the evaluation process in a clinical setting. (Project may meet comprehensive exam criteria.) Preceptored practicum is 90 contact hours. P: NUR 621, 790 & clinical courses.
- NUR 631 Principles of Learning and Instruction (3) S**
Study of the processes, philosophies and supporting theories for designing curriculum and instruction. Includes a one credit practicum (45 contact hours) project in which this knowledge will be applied in the design and critique of a unit of instruction for nursing or health education.
- NUR 635 Educational Evaluation (3) II**
Systematic study of educational evaluation and its application to professional nursing education and client education programs. Topics of study include: evaluation as a disciplined inquiry, frameworks for planning evaluations, the change process, norm-referenced vs. criterion-referenced measurement, reporting results, and costs-benefits analysis. Academic paper may meet comprehensive exam criteria for clinical problem solving, research, utilization and change project. P: NUR 631, 790 & clinical courses.
- NUR 641 Healthy Aging in American Society (3) OD**
Provides a perspective on aging in the United States, including an overview of the crucial societal issues regarding community living, health promotion and health care for the elderly. Common psychosocial and physiological problems encountered by health care professionals whose practice involves an aging population will be examined. These will be examined from the perspective of normal changes in aging, health promotion, primary prevention and research based intervention. Elective.
- NUR 643 Chronic Illness (3) II**
Discussion of framework for considering problems of chronic illness as well as the most common chronic illnesses and nursing diagnoses encountered in an adult and elderly population. Topics include broad concepts of chronic illness, diagnosis and treatment of common, stable chronic illnesses which serve as exemplars for studying diagnosis and care. One credit (45 contact hours) of practicum is planned for reinforcement and application of didactic content. Adult nurse practitioners' practica will be under the supervision of a primary care care physician or nurse practitioner. P: NUR 603, 641, 651.
- NUR 651 Advanced Pathophysiology (3) S**
Course emphasizes knowledge of pathophysiologic phenomena basic to the understanding of human responses to actual or potential health problems. The major pathophysiologic concepts selected for review are those of greatest concern to the discipline of nursing. Course content focuses on the use of the nursing process as it relates to these pathophysiologic phenomena in a practice setting. Students are encouraged to expand their conceptual thinking and discuss research related to physical and psychosocial alterations in the health of selected patient populations.
- NUR 653 Clinical Management of Adults (3) I**
A three credit hour practicum (135 contact hours) for adult nurse practitioner students under the direct supervision of a nurse practitioner or primary care physician. Focus on health assessment, diagnostic workup, selection, execution and evaluation of the most appropriate intervention protocols. Special consideration will be given to ethical, legal, economic and culturally sensitive issues in the care of adults. P: NUR 603, 604, 608, 611, 643, 651.
- NUR 654 Practicum in Adult Nursing (3) I, S**
A three credit practicum (135 contact hours) focusing on study and implementation of nursing interventions for patients with acute manifestations of physiologic imbalance. Synthesis of theory, practice and research will be enhanced through discussion of advanced practice

issues relevant to nursing process and interventions in acute and intensive care situations. Consideration will be given to ethical, legal, economic and culturally sensitive issues in providing care.

NUR 661 Case Management (3) I

Emphasis on the conceptual basis for nursing case management and the models and mechanisms of coordination for clients with complex needs for multiple services; the processes of resource assessment; service care planning; selection, coordination, monitoring of resources and ongoing evaluation of the client's movement through the health care system. A one credit practicum (45 contact hours) is required and will take place in the setting in which students plan to practice.

NUR 665 CNS Role Development (3) I

This course emphasizes the expanded role of expert nurse clinicians as clinical nurse specialists and their impact on care. The didactic portion of the course involves discussion of the history and essential components of the role of the clinical nurse specialist in practice and research. The practicum experience focuses on the investigation of dynamics of this role in a practice setting and will be determined through a process of negotiation between the instructor and student. Academic paper may meet comprehensive exam criteria for clinical problem solving, research utilization and change project. P: NUR 661, 790 & clinical courses.

NUR 670 Cardiac Rehabilitation Nursing (3) II

Course focuses on discussion of the history, structure, and process of cardiac rehabilitation nursing with particular emphasis on the interrelationship between theory, practice, and research specific to this specialty area. Examination of the expanded role of the nurse in cardiac rehabilitation as it impacts on client care from admission diagnostics to lifelong lifestyle modification.

NUR 789 Nursing Research I (3) II

Study of the research process relative to nursing practice, management, and education. Topics include philosophy of science and research, formulation of theoretical and conceptual frameworks for research, theory of measurement, inductive and deductive designs for nursing research, methods of data collection and instrumentation, ethics of research in nursing and the process of planning a research project. The classical experimental design is considered as well as alternate research strategies particularly applicable to nursing research. P: NUR 607 or independent study packet on theories recommended.

NUR 790 Nursing Research II (3) I

Strategies for the application of the research process as the focus of this course include the evaluation of research, the utilization of research, and the conduct of research. Content and activities developed for the course involve the process of evaluating and critiquing research; criteria for evaluation; the methods and process for utilization of research; current and prospective models for utilization; appropriate procedures for data collection, analysis, and interpretation; and development of a unique research proposal. P: NUR 607, 609, 789.

NUR 793 NICNP Role Practicum (3)

Final course in the Neonatal intensive care nurse practitioner option. Enactment of the NICNP Role under the supervision of a neonatologist or NICNP (135 contact hours) in the NICU and completion of the comprehensive exam paper which involves selection of a clinical problem, research utilization and planned change project to resolve the problem.

NUR 794 FNP Role Practicum (3)

Final course for family nurse practitioner students. Emphasizes the expanded role of the FNP in a three credit practicum (135 contact hours). Students will develop a collaborative relationship with a family practice physician preceptor and provide prenatal care and health needs of child rearing families, and assess, diagnose and treat simple acute and stable chronic conditions in patients of all ages under the direct supervision of the preceptor. P: NUR 604, 606, 616, 661.

NUR 795 Directed Independent Study (3) I, II, S

Independent project on a topic designed by the student with approval of the adviser and program chair.

NUR 796 ANP Role Practicum (3)

Final course in adult nurse practitioner option. Emphasizes the expanded role of the ANP in a three credit practicum (135 contact hours). Students will develop a collaborative relationship with a primary care physician preceptor and provide diagnosis and treatment of simple acute and stable chronic conditions in adult patients under the direct supervision of the preceptor. P: NUR 604, 606, 653, 661.

NUR 799 Master's Thesis (3) I, II

Course designed to assist the student in the preparation of the master's thesis. The thesis must demonstrate independent work based in part upon original material. Replication of studies is encouraged, explicitly when new digressions and/or innovative applications are involved. The thesis should present evidence of the student's thorough acquaintance with the literature of a limited field in nursing practice, administration and/or education. The student must be able to identify a researchable problem, prepare an acceptable prospectus, collect and analyze data, write the thesis, and successfully complete an oral defense of the final document. P: NUR 607, 609, 789, 790, and comprehensive examination.

PHARMACOLOGY (PHR)

Professors Dowd (Chair), Bertoni, Marcus, Pioreschi, and Stohs; Associate Professors Abel, Bierman, Jeffries, Khan, Makoid, Ohia and Roche; Assistant Professors Bockman, Dunlay, Parola, Scofield, and Wangeman.

Program and Objectives

The objective of graduate studies in pharmacology is to provide graduate students a comprehensive educational program in pharmacology. The programs are also designed to help the student obtain expertise in his or her area of research with detailed comprehension of a specialized area of pharmacology. These specialized areas include autonomic pharmacology, cardiovascular pharmacology, renal pharmacology, smooth-muscle pharmacology, exocrine pharmacology, immunopharmacology, toxicology, drug metabolism and hypertension. Specific areas of interest include drug-receptor interactions, signal transduction ion channel function and molecular approaches to studying receptor and gene function. The interdisciplinary nature of pharmacology offers the student a broad range of options for research endeavors.

Master of Science (M.S.) Program

The objectives of this program include preparing the student for participation in supervised research such as at an academic institution or in industry. The program is designed around research; therefore, the M.S. degree without thesis is not offered.

Doctor of Philosophy (Ph.D.) Program

The objectives of this program are to prepare highly qualified students for careers in research and teaching in the field of pharmacology. Ph.D. candidates will be required to demonstrate a broad knowledge of the field of pharmacology and detailed expertise in their research area. The emphasis of the pharmacology graduate program is to educate Ph.D. candidates.

Prerequisites for Admission

The applicant must possess a baccalaureate degree from an accredited college or university. The Graduate Record Examination (GRE) must be taken. Generally, an overall undergraduate quality-point average (QPA) of 3.0 or higher in sciences, and a combined GRE score above 1500 are required. Undergraduate courses in biology, general chemistry, organic chemistry, mathematics and physics are required. Isolated deficiencies may be made up in the graduate program. However, before a student starts research, these courses have to be completed with an overall QPA of 3.0 or higher.

The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by a score of 550 in the TOEFL (Test of English as a Foreign Language) examination.

General Requirements

For the Ph.D. degree at least 90 semester hours of graduate credit are required. Usually, 45 hours are obtained in course work, 25 are earned by independent research, and 20 are acquired in preparing the doctoral dissertation. To qualify for the M.S. degree in pharmacology, the student must earn at least 30 semester hours of graduate credit beyond the baccalaureate. The student must maintain a B (3.0) average throughout the graduate program.

Special Requirements

All students are required to take Physiology graduate level and Biological Chemistry courses. PHR 631 & PHR 632 — Medical Pharmacology I & II and PHR 711 — Receptor and Molecular Pharmacology — are also required for all graduate students.

- PHR 531 Chemical Basis of Drug Action I (3) I**
The chemical basis for drug action *in vivo* and *in vitro*. General chemical principles, physicochemical properties and drug-receptor interactions are used to derive structure-activity relationships for important drug classes permitting the understanding of the pharmacological and biopharmaceutical profiles of currently available drug products. Provides a basis for predicting biological properties and activities of future products. This course was formerly titled "Medicinal Chemistry I." P: IC.
- PHR 532 Medicinal Chemistry II (3) II**
Continuation of PHR 531. P: DC.
- PHR 537 Rational Drug Design and Discovery (2) I, OD**
Scientific basis for the rational design and development of new drug molecules. Discussion of drug-receptor theory, structure activity relationships, and specific examples of the design of new drugs. P: DC.
- PHR 595 Directed Independent Study (1-5) I, II, S (OD)**
Supervised independent projects that may include laboratory work, assigned readings, research papers, etc. Available in autonomic pharmacology, cardiovascular pharmacology, exocrine pharmacology, and neuropharmacology. P: Undergraduate or graduate stdg. and DC.
- PHR 597 Directed Independent Research (1-4) I, II, S (OD)**
Supervised independent research for motivated students to become involved in ongoing original research projects of the pharmacology faculty. P: Undergraduate or graduate stdg. & DC.
- PHR 631 Medical Pharmacology I (5) I**
Human pharmacology and therapeutics. Lectures, conferences, and demonstrations.
- PHR 632 Medical Pharmacology II (5) II**
A continuation of Medical Pharmacology I.
- PHR 711 Receptor and Molecular Pharmacology (3) II, OD**
Exhaustive treatment of receptor and molecular pharmacology that considers historical development of concepts, radioligand receptor binding, drug-receptor interactions, receptor characterization and isolation, and signal transduction. P: PHS 601; BCH 600 or DC.
- PHR 715 Advanced Pharmacology (3) II, OD**
Discussion of recent advances in the pharmacology of cardiovascular, autonomic and central nervous systems. Comprehensive review of drug classes including discussions on possible mechanisms by which drugs produce functional effects in these systems. P: Gr. stdg.; PHR 631; or DC.
- PHR 717 Molecular Biology in Pharmacology (2) I, OD**
A survey course in molecular biology and relevant techniques. The course is geared to pharmacologists and others in medical and scientific fields seeking fundamental knowledge of this area. The goal is to provide an understanding of the theoretical and practical aspects of molecular biology for use in research. P: DC.

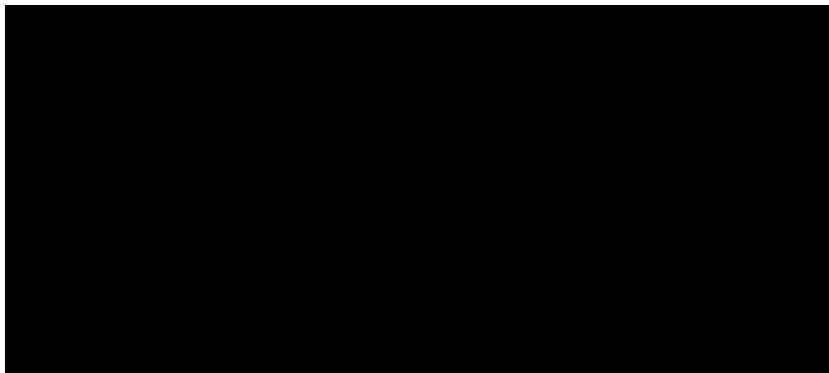
- PHR 723 Drug Metabolism and Disposition (2) I, ENY**
An in-depth consideration of the various factors which influence the metabolism and disposition of drugs and foreign chemicals. The influence of physiological factors, physico-chemical factors, genetic factors, pathological factors, inducers, activators, inhibitors, co-oxidation, regioselectivity and stereoselectivity on drug metabolism will be addressed. Consideration of the importance of various cytochrome P-450 isozymes and their metabolic specificities. P: DC.
- PHR 790 Research Methods in Pharmacology (1-5) I, II, S (OD)**
Laboratory rotations in which graduate students perform or observe methods used in pharmacological research. The value of the method and its application to the research efforts of the pharmacology faculty are described in detail. P: DC.
- PHR 791 Pharmacology Seminar (1) I, II**
Seminar in selected subjects for pharmacology graduate students. P: DC.
- PHR 797 Master's Directed Independent Research (Credit by arrangement) I, II, S**
Supervised original research. P: DC.
- PHR 799 Master's Thesis (1-6) I, II, S**
Review of the literature and research data; writing of the thesis. Student must register for this course in any term when engaged in formal preparation of the Master's thesis; however, six credit hours are the maximum applicable toward the degree. P: DC.
- PHR 897 Doctoral Directed Independent Research (Credit by arrangement) I, II, S**
Supervised original research. P: DC.
- PHR 899 Doctoral Dissertation (1-6) I, II, S**
This investigative work is the principal area of research carried out by the candidate during doctoral studies. It is conducted under the direct supervision of the candidate's major adviser and dissertation committee in preparation for the doctoral dissertation. Twenty credit hours are the maximum applicable toward the degree. Students will register for this course during formal preparation of the doctoral dissertation. P: PHR 897.

PHILOSOPHY (PHL)

Professors Murray (Chair), Carlson, Dougherty and Feezell; *Associate Professors* Fleming, Krettek, Schuler, Selk, and R. White; *Assistant Professors* M. Brown, W. Stephens and T. Williams

Philosophy is not offered as a graduate major. However, the following philosophy course may, with the approval of the major adviser, be included as specified in certain graduate degree programs offered by various other departments.

- PHL 593 Advanced Readings in Philosophy (1-4) OD**
Independent readings course worked out individually for the student. May be repeated to a limit of six hours.



PHYSICS (PHY)

Associate Professor Kennedy (Chair); Professors Cipolla (Program Director) and Zepf; Associate Professor Cherney; Assistant Professors McShane, and Seger; Adjunct Associate Professor Wagener; Adjunct Instructors Chrin and Sakrejda.

Program and Objectives

Master of Science (M.S.) Program

At Creighton University the graduate program in Physics is flexible and designed to combine a solid grounding in Physics with adaptability to a wide range of student interests and career objectives. There is a close association of students and faculty that facilitates responsiveness to the needs of each student. Graduates of four-year liberal arts colleges are of special interest to the Physics faculty, as are secondary-school and junior-college teachers who wish to enrich their background in physics. Late afternoon scheduling of most classes makes it possible for working students to advance toward the M.S. degree on a part-time basis.

Prerequisites for Admission

In general, properly prepared students will have undergraduate preparation in physics comparable to the present minimum Physics degree requirements at Creighton University. This must include upper-division course work covering each of the following categories: mechanics, electromagnetics, and modern physics. Additional work in physics to bring the total to twenty-four semester hours, plus support from mathematics, is needed.

The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by a score of 550 in the TOEFL (Test of English as a Foreign Language) examination.

General Requirements

Flexibility is achieved within the Graduate Division of the University through two types of Master's programs — Plan A (with thesis) and Plan B (without thesis) — and within the Physics Department through the further tailoring of these programs to the needs of the individual student.

All Physics graduate students at Creighton, whether in a Plan A or a Plan B program, take the following four courses: PHY 611 — Classical Mechanics; PHY 621 — Electromagnetic Theory; PHY 631 — Quantum Mechanics I; and PHY 641 — Statistical Mechanics. These "core courses" are designed to provide an advanced understanding of concepts, principles, and methods in the fundamental areas of Physics. In building around this core, there is considerable latitude in the choice of course work to complete the Master's degree program.

The Master's program is designed to be completed by full-time students in two academic years or less.

Special Requirements

Physics graduate students individually arrange their graduate programs in consultation with their advisers. Course electives may be selected with the consent of the advisers. These courses normally come from the areas of atmospheric sciences, mathematics/computer science, chemistry, or biology.

PHY 505 Workshop in Earth Sciences (3) OD (Same as NSC 505)

Intensive workshop for teachers and teacher education students, providing practice in preparing and using materials for teaching topics in earth sciences: geology, meteorology, oceanography, climatology, hydrology, and astronomy.

- PHY 509 Principles of Technology I** (3) II,OD (Same as EDU 509)
This course is designed to prepare teachers to institute a Principles of Technology course, a high school course in applied science for vocational-technical students in the eleventh and twelfth grades. Principles of Technology is designed to teach the practical principles in physical science that help students understand the behavior (and misbehavior) of modern equipment.
- PHY 521 Electronics for Scientists** (3) I
Basic course in electronics. Laboratory experiments include an introduction to measuring instruments, solid state components, and digital and logic circuits. Lecture closely follows the experiments. 1R, 5L. P: PHY 212.
- PHY 531 Quantum Mechanics** (3) II
Wave-packet representation of particles; development of the formalism of quantum mechanics; applications to the harmonic oscillator, the hydrogen atom, square-well potential, and scattering. P: PHY 301 & 471.
- PHY 541 Thermodynamics and Statistical Mechanics** (3) II
Laws of thermodynamics, thermodynamic variables, thermodynamic potentials; kinetic theory, distribution functions, classical and quantum statistics. P: PHY 212 or CHM 331; MTH 246.
- PHY 551 Mathematical Physics** (3) II
Mathematical methods for the representation of physical processes in space and time. Fourier and other complete representations; vector calculus; tensors and matrices. Selection and emphasis on topics keyed to needs of students enrolled. P: PHY 212; MTH 347.
- PHY 558 Relativity: The Special and General Theories** (3) S (OD)
Review of classical relativity (frames of reference); Einstein's special theory of relativity (length contraction, time dilation, mass dependence on speed, $E = mc^2$); Einstein's general theory of relativity (gravity, equivalence of gravitation and acceleration, deflection of light, time effects). P: PHY 212; MTH 246.
- PHY 561 Nuclear Physics** (3) I
Application of elementary quantum mechanical theory and relativity to the study of nuclear structure, radioactive decay, and nuclear models. P: PHY 531.
- PHY 562 Nuclear Instruments and Methods** (2) I
Laboratory work in nuclear physics designed to teach the methods and procedures of experimental nuclear physics at an advanced level and to familiarize the student with modern research equipment and its use. 3L. P: PHY 302 or IC.
- PHY 571 Solid State Physics** (3) II
Introduction to the theory of the solid state based on quantum mechanics. Crystal structure and symmetry, lattice dynamics, free electron model, and band theory of solids. P: PHY 531.
- PHY 572 Solid State Laboratory** (1) II
Laboratory work in solid state physics including x-ray crystallography. 3L. CO: PHY 571 or IC.
- PHY 595 Special Topics** (3) OD
A course treating physics topics of special interest. The course will be subtitled in the Schedule of Classes and may be repeated under different subtitles. P: IC.
- PHY 611 Classical Mechanics** (Core Course) (3) I
Variational principles, Lagrange's equations, two-body central force motion, rigid-body motion, transformations, small oscillations.
- PHY 621 Electromagnetic Theory** (Core Course) (3) II
Electromagnetic fields, application of Maxwell's equations to electromagnetic waves and their interaction with matter.
- PHY 631 Quantum Mechanics I** (Core Course) (3) II
Development of the formalism of quantum mechanics with applications to simple systems.
- PHY 632 Quantum Mechanics II** (3) OD
Applications of quantum mechanics to current fields of interest. P: PHY 631.
- PHY 641 Statistical Mechanics** (Core Course) (3) I
Review of thermodynamics, classical and quantum statistical theory, applications to current fields of interest.

- PHY 652 Advanced Mathematical Methods (3) OD**
Small oscillations, transformations, special functions, boundary value problems. P: MTH 347.
- PHY 785 Practicum in College Teaching (3) OD**
Practical experience in the observation and conduct of classroom and laboratory teaching on the college level. Experience obtained under the immediate supervision of senior members of the Department of Physics. Required of all teaching assistants in the department. 9L, 1C.
- PHY 790 Research Methods (2) OD**
Introduction to current research in Physics.
- PHY 791 Graduate Seminar (1) I, II**
Oral presentation and critical discussion of subjects in physics or related fields by invited speakers, faculty, and graduate students.
- PHY 793 Directed Independent Readings (1-3) I, II, S**
Advanced instruction in areas of special interest to the faculty, such as the following: atomic physics, nuclear physics, particle physics, solid state physics, surface physics, statistical mechanics, foundations of physics; biophysics. P: IC.
- PHY 795 Directed Independent Study (1-3) I, II, S**
Advanced study in a specific area of interest to the faculty. P: IC.
- PHY 797 Directed Independent Research (1-3) I, II, S**
An independent research project under the guidance of a member of the faculty. Weekly conferences. Written report of work required at the end of each semester. P: IC.
- PHY 799 Master's Thesis (1-3) I, II, S**
Research in connection with the preparation of the Master's thesis. Students must register for this course in any term when engaged in formal preparation of the master's thesis; however, six credit hours are the maximum applicable toward the degree. P: DC.

PHYSIOLOGY See Department of Biomedical Sciences

***POLITICAL SCIENCE AND
INTERNATIONAL STUDIES (PLS)***

Associate Professor Mans (Chair); Professor Wunsch; Associate Professors Evans, Meeks, and Wise; Assistant Professors Clark, Crawford and Ramsden.

Political Science is not offered as a graduate major. However, the following Political Science courses may, with the approval of the major adviser, be included as specified in certain degree programs offered by other departments and the graduate program in International Relations.

- PLS 537 International Law (3) I, AY (Same as INR 537)**
Contemporary nation-states are creations of international law. Course engages the many controversies over who is subject to this law, how the law is created and enforced, and the relationship of international law and international politics. Didactic and case-study approach. Substantial research and writing. P: Jr. stdg.
- PLS 602 Proseminar in International Politics (3) OD (Same as INR 602)**
Foundation in concepts and principles for analyzing and synthesizing global political life.
- PLS 604 Studies in International Relations (3) OD (Same as INR 604)**
Intensive reading and investigative papers as assigned by the instructor.
- PLS 605 Studies in International Development Policy (3) OD (Same as INR 605)**
Intensive reading and investigative papers as assigned by the instructor.

- PLS 607 Problems in African Politics** (3) OD (Same as INR 607)
Nationalism, communalism, political integration, and political economy in contemporary, Sub-Saharan Africa; secondary topics will include economic development, political change, and development ideologies.
- PLS 611 Studies in Political Change** (3) OD (Same as INR 611)
Intensive reading and investigative papers as assigned by the instructor.
- PLS 612 Studies in Contemporary Europe** (3) OD
Intensive reading and investigative papers as assigned by the instructor.
- PLS 617 Studies in International Law** (3) OD (Same as INR 617)
Intensive reading and reports as assigned by the instructor.
- PLS 631 Studies in Marxism** (3) OD (Same as INR 631)
Investigative papers and research reports as assigned by the instructor.
- PLS 686 Studies in United States Policy Toward China** (3) OD (Same as INR 686)
Investigative reading and investigative papers as assigned by the instructor.
- PLS 687 Studies in the Foreign Policy of China** (3) OD (Same as INR 687)
Intensive reading and investigative papers as assigned by the instructor.
- PLS 701 Seminar in Comparative Politics** (3) OD (Same as INR 701)
Investigative papers and research papers as approved by the instructor.
- PLS 706 Seminar in Contemporary International Politics** (3) OD (Same as INR 706)
Investigative papers and research papers as approved by the instructor.
- PLS 707 Seminar in National Security Policy Seminar** (3) OD (Same as INR 707)
Investigative papers and research reports as approved by the instructor.
- PLS 708 Seminar in Political Change** (3) OD (Same as INR 708)
Investigative papers and research reports as approved by the instructor.
- PLS 709 Seminar in World Order** (3) OD (Same as INR 709)
Investigative papers and research reports as approved by the instructor.
- PLS 712 Seminar in European Politics** (3) OD (Same as INR 712)
Investigative papers and research reports as approved by the instructor.
- PLS 747 Seminar in International Law and Organization** (3) OD (Same as INR 747)
Investigative papers and research reports as approved by the instructor.
- PLS 793 Directed Independent Readings** (3) OD

PSYCHOLOGY (PSY)

Professors Gardner (Chair) Walker and Ware; *Associate Professors*, Leak, Lupo, and Murphy; *Assistant Professors* Finken, Lundquist, Short and Stone.

Psychology is not offered as a graduate major. However, the following Psychology courses may, with the approval of the major adviser, be included as specified in certain graduate degree programs offered by other departments.

- PSY 540 Introduction to Counseling** (3) I, S (Same as COU 540)
A survey of the counseling process including the role of the counselor, characteristics of clients, helping and referral skills, and theories of counseling. P: Jr. stdg.
- PSY 793 Directed Independent Readings** (3) I, II, S
Intensive reading in an area approved by the instructor. P: IC.
- PSY 795 Directed Independent Study** (1-3) I, II, S
Independent project designed by the student with the approval of the instructor. P: IC.

SOCIAL WORK (SWK)

Associate Professor Grandbois (Chair); Assistant Professor Harris.

Social Work is not offered as a graduate major. However, the following Social Work courses may, with the approval of the major adviser, be included as specified in certain graduate degree programs offered by various other departments.

- SWK 505 Multidisciplinary Interventions With Families of Exceptional Children and Youth (3)I, II, S** (Same as EDU 505)
Course designed to address the needs of families of exceptional children and youth and train the support personnel who work with exceptional children. P: Jr. stdg.; EDU 501.
- SWK 571 Working With Troubled Families (3) S** (Same as EDU 571, COU 571)
Designed to give participants an understanding of family dynamics; why troubled families remain troubled; how intervention can help a family overcome its difficulties. Theoretical presentations and exercises relating to these presentations with opportunities for class discussion of both. P: Jr. stdg.
- SWK 573 Treatment Modalities in Marriage and Family Therapy (3) OD**
(Same as COU 573)
The primary family systems modalities in marriage and family therapy are presented both in theory and in case study analysis. The presenting problem, history of the problem, family history, identification of dysfunctional dynamics, goals, plan of treatment, and outcome/evaluation are emphasized in each modality. P: IC.

STATISTICS (STA)

Associate Professors Cheng (Chair, Department of Mathematics/Computer Science) and Fong.

Statistics is not offered as a graduate major. However, the following Statistics courses may, with the approval of the major adviser, be included as specified in certain degree programs offered by various other departments. See the Department of Mathematics for a model plan of study in Statistics.

- STA 521 Computational Methods in Statistics (3) OD**
Use of packages of statistical programs, calculation of statistical tables. Monte Carlo methods. P: A course in statistics; CSC 113 or 221.
- STA 525 Nonparametric Methods (3) OD**
Applications of nonparametric estimates, confidence, intervals, tests, and multiple comparison procedures. P: A course in statistics.
- STA 527 Sample Surveys (3) OD**
Simple, systematic, stratified, and cluster random sampling; proportions; ratios; selection of sample size. P: A course in statistics.
- STA 561 Mathematical Statistics I (3) (Same as MTH 561)**
Introduction to probability and probability distributions including techniques for finding expected values and variance of discrete and continuous variables. These distributions and their properties are examined to establish their application to applied statistical methods. P: MTH 246.
- STA 562 Mathematical Statistics II (3) (Same as MTH 562)**
Using probability distributions as a foundation and random sampling, methods for estimating distribution parameters are developed with applications to hypothesis testing. The course also includes an introduction to linear models, regression analysis, analysis of variance and design of experiments. P: STA 561.
- STA 563 Mathematical Statistics III (3) OD (Same as MTH 563)**
Optimal decision procedures, further normal distribution theory, noncentral chi-square and F distributions, introduction to the theoretical basis for analysis of variance, nonparametric methods. P: STA 562.

- STA 567 Linear Statistical Models (3) I**
Least squares method; general linear hypothesis; multiple correlation and regression; analysis of covariance. P: STA 363 or 561; MTH 523 or 529.
- STA 569 Analysis of Variance and Design of Experiments (3) II**
One- and two-way classifications; blocking; nesting; multiple comparisons; incomplete designs; variance components; factorial experiments; confounding. P: STA 363 or 561.
- STA 571 Linear Programming (3) II (Same as MTH 571)**
Introductory course in operations research. Linear models and solutions using the simplex method, duality theory and sensitivity analysis. P: MTH 523 or 529.
- STA 573 Probabilistic Models (3) II AY (Same as MTH 573)**
Queuing theory, inventory theory, Markov processes, simulation, and nonlinear programming. P: STA 561.
- STA 575 Introductory Stochastic Processes (3) II AY (Same as MTH 575)**
Random walk, normal processes and covariance stationary processes, counting processes and Poisson processes, renewal counting processes, discrete and continuous parameter Markov chains. P: STA 561.
- STA 577 Applied Multivariate Analysis (3) OD**
Inference about mean vectors and covariance matrices, canonical correlation, principal components, discriminant analysis, cluster analysis, computer techniques. P: STA 563, 567.
- STA 579 Applied Time Series Analysis (3) OD**
Forecasting; Box-Jenkins models; time series; regression; exponential smoothing; transfer function models; auto covariance functions. P: STA 561.
- STA 601 Statistics in Application (3) S**
Estimation, tests of hypotheses, basic experimental designs, least squares, regression and correlation. Some nonparametric techniques. Graduate credit for nonmathematic majors only.
- STA 625 Nonparametric Statistical Models (3) II AY**
Applications of nonparametric estimates; confidence intervals; tests; multiple comparison procedures. P: MTH 562 or equiv.
- STA 627 Sampling Survey (3) OD**
Sampling distribution theory; simple random sampling; stratified random sampling; systematic sampling; cluster sampling; ratio; regression; difference estimation; selection of sample size; population size estimation.
- STA 653 Reliability Theory (3) I OD (Same as MTH 653)**
Structured properties of coherent systems; reliability of coherent systems; classes of life distributions based on notions of aging; maintenance and replacement models; limiting distributions of coherent system life.
- STA 663 Applied Time Series Analysis (3) OD (Same as MTH 663)**
Stochastic processes; autocovariance functions; estimation in autoregressive and moving average processes; the spectrum; spectral estimator. P: MTH 562 or equiv.
- STA 667 Linear Statistical Models (3) AY**
Least squares method; general linear hypothesis; multiple correlation and regression; analysis of covariance. P: MTH 562 or equiv. and MTH 529 or equiv.
- STA 669 Advanced Analysis of Variance and Design of Experiments (3) OD**
One- and two-way classifications; blocking; nesting; multiple comparisons; incomplete designs; variance components; factorial experiments; confounding. P: MTH 562 or equiv.
- STA 675 Stochastic Processes (3) II, AY (Same as MTH 675)**
Normal processes; covariance stationary processes; counting processes; Poisson processes; renewal counting processes; Markov chains. P: MTH 562 or equiv.
- STA 683 Applied Multivariate Analysis (3) OD**
Inference about mean vectors and covariance matrices, canonical correlation, principal components; discriminate analysis.
- STA 793 Directed Independent Readings (3) OD**

THEOLOGY (THL)

Professors Hauser (Chair and Program Director), Hamm, Lawler, Malina, and Schultenover; *Associate Professors* Le Beau, Reno, Shanahan, Simkins and Wright; *Assistant Professors* Calef, Fleming, Mueller, O'Keefe, and Weiss.

Master of Arts with a Major in Theology/Master of Arts with a Major in Ministry

The graduate programs in theology and in ministry both engage Christians of all denominations in intensive investigations of developments in the major areas of contemporary theology: Biblical Studies, Historical-Doctrinal-Liturgical Christian Life Studies (Moral Theology and Spirituality).

The graduate program in theology is designed both to give a broad overview of the major areas of contemporary theology as well as to give an in-depth concentration in one area of theology chosen by the student. The program is intended for the growing number of professionals engaged in theological-ministerial activities in parishes and schools as well as for students preparing for doctoral programs and for lay people interested in furthering their theological education.

The graduate program in ministry is designed both to give a broad overview of the major areas of contemporary theology as well as to give a special focus and training in a specific area of Christian ministry chosen by the student.

While valuing and exposing students to other religious traditions, as a Catholic and Jesuit university, Creighton University conducts its theological inquiries within the Christian-Catholic tradition.

Inquiries about the programs should be directed to Director, Graduate Programs in Theology and Ministry, Department of Theology, Creighton University, Omaha NE 68178.

Prerequisites for Admission to Either Program

Entry into the program requires a bachelor's degree from an accredited institution with a minimum of eighteen (18) semester hours of credit in theology or equivalent. Applicants will also be required to have an undergraduate grade-point average of 3.0 as well as adequate Graduate Record Examination scores.

The Graduate School requires all students from countries in which English is not the native language to demonstrate competence in English by a score of 550 in the TOEFL (Test of English as a Foreign Language) examination.

Requirements for the Master of Arts with a Major in Theology

Students will be assigned a graduate adviser and, in conversation with the adviser, will choose a program of study best suited to their interests and career plans. Thirty-three (33) semester hours are required for the degree, including three in THL 799: Masters Thesis.

The courses for the Master of Arts with a Major in Theology are distributed as follows:

Required courses: 12 credit hours (see list below) Area courses: 9 credit hours including:
3 in Biblical Studies
3 in Historical/Doctrinal/Liturgical Studies
3 in Christian Life Studies

Elective courses: 9 credit hours
3 credit hours: THL 799—Master’s Thesis:

The four required courses (12 credit hours) are:
THL 703—The Mediterranean Matrix of Christian Theology
THL 731—Symbolic Theology: The Mediated God
THL 733—Images of the Church Through the Ages
THL 737—Historical Context of Theology in the United States

Requirements for the Master of Arts in with a Major in Ministry

Students will be assigned a graduate adviser and, in conversation with the adviser, will choose a program of study best suited to their interests and career plans. Thirty-three (33) semester hours are required for the degree, including three in THL 798: Pastoral Synthesis.

The courses for the Master of Arts with a Major in Ministry are distributed as follows:

Required courses: 12 credit hours (Same as Master of Arts with a major in Theology)
Theology Courses—12 hours
THL 560—Theology of Ministry
THL 792—Practicum in Ministry
Theology Electives—6 hours
General Elective Courses—6 hours: Two courses to be chosen from any of three areas: Biblical Studies, Historical-Doctrinal-Liturgical Studies, Christian Life Studies. Courses outside the theology department pertinent to the student’s intended ministry may also be taken with the consent of the graduate adviser.
THL 798—Pastoral Synthesis: 3 hours

Biblical Studies

- THL 501 The Pentateuch (3) OD**
Origin and composition of the first five books of the Bible. Historical and theological traditions contributing to their formation. Emphasis on their unique theology and on the use of the books in the New Testament period. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 503 The Prophetic Literature of the Old Testament (3) OD**
The uniqueness of the prophetic movement. Background literary styles, relevance of the prophetic message. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 504 The Wisdom Literature of the Old Testament (3) OD**
Study of the patterns of Proverbs, Job, Ecclesiastes, some of the Psalms, compared with the wisdom literature of other ancient peoples. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 507 Gospel of Matthew (3) OD**
A study of the theological vision of the text of this gospel, using all available methods and resources: redaction criticism, composition criticism, narrative criticism, etc. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 508 The Gospel of Mark (3) OD**
A study of the first written gospel, its outline and structure, authorship, sources and influence on later New Testament writings. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 509 The Gospel of Luke and the Acts of the Apostles (3) OD**
Study of Luke-Acts as a two-volume whole—a work of history, theology, and literary artistry. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 511 The Gospel of John (3) OD**
Study of the unique witness to the meaning of Jesus in the Johannine Gospel. P: THL 100 and a 200-level Scripture course and Jr. stdg.

- THL 514 The Pastoral Epistles (3) OD**
The first attempts to weld Christianity and Western humanism as initiated in the Epistles to Timothy and Titus. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 516 The Book of Revelation (The Apocalypse) (3) OD**
A contemporary scholarly interpretation of the book of Revelation with reference to contemporary apocalyptic. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 517 The Parables of Jesus (3) OD**
Stories that formed the core of Jesus' preaching. How he told them. How the evangelists retold them. How we understand them today. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 518 Women and the Bible (3) OD**
Study of the representations of women in biblical narratives; attention to the construction of gender in the ancient world. Introduction to the various approaches contemporary women are taking to these biblical texts. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 520 The Dead Sea Scrolls (3) OD**
Introduction to the Dead Sea Scrolls and various theories about their origin. Exploration of the light they shed on the textual history of the Hebrew Bible, developments in ancient Judaism, and the early history of Christianity. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 523 The Social World of the New Testament (3) OD**
Study of the physical and cultural elements of New Testament Palestine. Designed to help those teaching children at elementary levels. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 524 History and Archaeology of Ancient Israel (3) OD**
An examination and reconstruction of the history of ancient Israel from biblical and other ancient New Eastern literary texts, and from archaeological and epigraphic materials. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 525 Syro-Palestinian Archeology and the Bible I (3) S (Same as CLC 525)**
Participation in all aspects of an archaeological excavation. Students will be instructed in archaeological field methods and techniques through field sessions and afternoon workshops. Evening lectures will focus on significance of archaeology for understand the history of ancient Palestine and the Bible. P: THL 100 and a 200-level Scripture course and Jr. stdg. CO: THL 526.
- THL 526 Syro-Palestinian Archeology and the Bible II (3) S**
Continuation of THL 525. CO: THL 525
- THL 527 Study Tour of Biblical Israel (3) S**
Two-week guided tour of the biblical sites in Israel. Typical sites: Caesarea Maritima, Sea of Galilee, Tiberias, Bethsaida, Capernaum, Tabgha, Jordan River, Sepphoris, Megiddo, Nazareth, Mt. Tabor, Hazor, Tel Dan, Caesarea Philippi, Tel Bet Shean, Jericho, Judean Wilderness, Mt. of Olives, Bethlehem, Jerusalem, Masada, and Qumran. A biblical scholar accompanies the group, supplementing local guides. Requirements include readings before trip, written reflections afterward.

Historical-Doctrinal-Liturgical Studies

- THL 535 Doctrinal Development: Christology (3) OD**
Development of the Christian community's understanding and teaching about the person and work of Jesus Christ. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 537 Doctrinal Development: Sin and Grace (3) OD**
Development of the Christian community's understanding and teaching about the mysteries of grace and sin.
- THL 544 Christian Celebration: The Liturgical Year (3) OD**
Biblical origins and historical development of feast and season, e.g., Christmas and Easter. The theologies of the saints' days and celebrations. History and meaning of daily common prayer in the Church. P: THL 100 and a 200-level Scripture course and Jr. stdg.

- THL 545 Liturgy and Christian Life (3) OD**
The historical development of Western Liturgy and its technological interpretation through the centuries. Emphasis on the saving presence of Christ and on the role of liturgy in the rest of Christian life. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 552 The Christian Church: Keeping the Faith Through Shifting Paradigms (3) OD**
A historical and systematic effort (a) to determine the authentic essence and center of Christianity and (b) to describe and critically evaluate how the Christian church, via shifting paradigms and images, attempted in its journey through time, space, and cultures to preserve and propagate the authentic Christian witness. P: THL 100 and a 200-level Scripture course and Jr. stdg.

Christian Life Studies

- THL 560 Theology of Ministry**
Through historical investigation of the practice of ministries in the western church from earliest times to the present, this course aims to arrive at some systematic conclusions about the nature of ministry. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 561 Finding God in Daily Life: Prayer and Discernment (3) OD**
General introduction to Christian spirituality with emphasis on personal prayer. Goal is to improve the quality of Christian living and praying through better understanding of their internal dynamics. Course focuses on the theology of the Holy spirit, spirituality of Thomas Merton, mysticism and discernment of spirits. Students are expected to practice techniques presented in class. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 563 Contemporary Moral Problems (3) OD**
(463) A comprehensive study of one or more moral issues facing contemporary society.
- THL 565 Catholic Social Teaching (3) OD**
historical development of Catholic social teaching from the 1891 publication of "The Condition of Labor" to the present. Students are encouraged to apply the core insights of the tradition to contemporary issues. P: Two previous THL courses; Jr. stdg.
- THL 570 Faith and Non-Violence (3) OD**
The Christian foundation supporting a theology of non-violence. Includes examination of selected writings of Gandhi, Martin Luther King Jr., the New Testament, and Catholic Church teaching on just war, nonviolence, and conscientious objection. P: Two previous THL courses; Jr. stdg.
- THL 571 Understanding and Dealing with Suffering: Hebrew and Christian Perspectives (3) OD**
Survey of perspectives toward suffering from Hebrew and Christian sources. Presentation of current Christian theologies on Divine Providence -- the relationship between God and suffering in the world -- as well as practical guidelines for establishing helping relationships with suffering people. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 572 Ethics and Spirituality (3) OD**
Consideration of the diverse spiritual traditions of Christianity to see asceticism, prayer, contemplation and discernment as categories which bridge spirituality and ethics. The traditional strands of Christian spirituality as resources for the contemporary life of faith and action. Readings from John of the Cross, Kierkegaard, Kenneth Kirk, Dorothy Day, Merton, Barth and Rahner. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 573 Religion and Politics (3) OD**
Four Christian formulations of the relation of religion to politics: the sectarian approach, linked to liberal humanism; the natural law tradition, reformulated as basic human rights; the integration of religion and politics in liberation theology; and Christian realism with its dialectic of distance and engagement. Some of the complex interpenetrations of religious issues and political realities. P: THL 100 and a 200-level Scripture course and Jr. stdg.
- THL 585 Foundational Principles and Leadership Skills for Youth Ministry (3) OD**
The foundational understandings and principles of comprehensive youth ministry; a deeper understanding for the minister of the theological foundations of Youth Ministry. Theories, skills and approaches for effective leadership in ministry.

- THL 586 Fostering the Faith Growth of Youth Through the Components of Youth Ministry** (4) OD
Exploration of adolescent spirituality, theological and spiritual foundations for engaging young people in the work of justice and service, theological understandings of faith, discipleship, and Catholic identity, and caring for young people and their families.
- THL 590 Contemporary Religious Education: Theory and Practice** (3) I
Overview of the principles for communicating the Christian message effectively to different age levels with opportunities to observe and put them into practice. May be taken in lieu of EDU 449. P: Jr. stdg.
- THL 660 Dreamwork: Befriending the Unconscious** (1) S
This course focuses on the psychological theories of dreams, methods of dream analysis, symbology in dreams, dream interpretation, and the spiritual aspect of dreams. Through lectures, videos, personal dream journaling, and group work, the student will be exposed to both the theoretical and practical aspects of dream analysis and interpretation.
- THL 661 T'ai Chi Chih: Joy through Movement** (1) S
T'ai Chi Chih's body movement meditation releases stress by relaxing the body and refreshing the mind. The twenty simple movements can be done by all regardless of age and physical condition.
- THL 662 Chi-Kung Moving Meditation: Embodying Spiritual Attentiveness** (1) S (626)
An introduction for Christians to an ancient system of movements developed by Chinese hermits and contemplatives in order to harness and order the body's energies, thereby providing a positive role for the body in spiritual development. This class is also open to students enrolling as auditors.

Biblical Studies

- THL 701 Biblical Interpretation: Hermeneutics in the Writing and in the Reading of Scripture** (3) OD
A study of the ongoing interpretive process that first formed the Judeo-Christian biblical traditions and then made use of those traditions in the development of the post-canonical tradition. First, how the Bible was made; then, what was made of the Bible. Implications for interpreting Scripture today.
- THL 703 The Mediterranean Matrix of Christian Theology** (3) OD
Christian theology has most often been articulated in analogies taken from the Mediterranean world and Mediterranean social experience: God the Father, Trinity, Grace, Salvation, Mediation, Patron Saint, Holiness and the like rank among such analogies. This course investigates the cultural and contextual meanings of these analogies, not as sets of abstract philosophical ideas, but as the vibrant social metaphors they originally were. Comparative scenarios describing the culture(s) of the Mediterranean basin are presented. The aim is adequate interpretation of what these originally meant in their Mediterranean setting, with parallel developments in Judaism and Islam.
- THL 704 Contemporary Biblical Interpretation: The Synoptic Gospels** (3) OD
Investigation of the two main approaches to biblical interpretation, the historical critical method and the literary aesthetic method, and of the specific theories of reading from which they derive. Reasons for following the scenario model of reading. Methods applied to selected Synoptic passages and to selected statements of church councils to test their ramifications.
- THL 705 New Testament Churches** (3) OD
Study of realities of first-century church life expressed and implied in the canonical documents, e.g. the church of Mark, of Matthew, of John, of Luke-Acts, of Hebrews, of 1 and 2 Corinthians. In what ways are these New Testament images of first-century church life normative for church life today?
- THL 706 The Gospel of Matthew** (3) OD
An in-depth exploration of the Gospel of Matthew using a variety of methods, especially redaction criticism and narrative analysis. Special attention to Hebrew Bible background.
- THL 707 Luke-Acts** (3) OD
A close reading of Luke's two-volume continuation of the story of Israel in the stories of Jesus and the church. Special attention to the Third Evangelist's retelling of Mark and his understanding of God's working through the church.

- THL 708 Paul: The Major Writings (3) OD**
Study of Galatians, Romans, and the Corinthian correspondence, with special attention to their literary forms and their implied pastoral settings.
- THL 709 The Gospel of John: Contemporary Approaches (3) OD**
An investigation into the framework of John and exegesis of select text-segments in terms of Johannine source criticism, historical criticism and socio-linguistics, viewing the gospel as a prime example of anti-language.
- THL 711 Israelite Religion in Perspective (3) OD**
The development of the religion of Israel will be studied from its origins to the time of Jesus. Emphasis will be placed on the relationship between Israel's religion and the religion of her Near Eastern neighbors, and on its continuities and discontinuities with the Christian faith.
- THL 712 Creation and Ethical Order (3) OD**
The biblical views of creation will be studied and compared with ideas of creation in other cultures, ancient and modern. Emphasis will be placed on the role creation plays in structuring societal values and defining the meaning of existence.
- THL 713 Liberationist Readings of New Testament Texts (3) OD**
The perennial hermeneutical issue - how one interprets, understands, and uses past traditions in the present - addressed from a liberationist perspective. Introduction to hermeneutical theory followed by examination of readings of New Testament texts from diverse liberationist perspectives: South African, Latin American, feminist, and womanist.

Historical-Doctrinal-Liturgical Studies

- THL 731 Symbolic Theology: The Mediated God (3) OD**
This course examines systematically: (a) the mediating function of symbol in a human life; (b) theology as humankind's search to mediate the Transcendent in symbolic language; (c) Christology as Christian humankind's search to mediate the Transcendent in Jesus called *christos*; (d) ecclesiology as Christian humankind's search to mediate the Christ in the community of women and men called *ekklesia*; (e) sacramentology as Christian humankind's search to mediate the Transcendent in solemn symbolic actions called *mysteria*.
- THL 732 Theologies of Salvation (3) OD**
A theological reflection on the question: "What does it mean to be saved in Jesus Christ?" In dialogue with biblical, traditional and contemporary insights, including liberationist, feminist and ecologically sensitive theologies, students are asked to propose a theology of salvation relevant to contemporary life.
- THL 733 Images of the Church through the Ages (3) OD**
The kaleidoscopic journey of the pilgrim church through successive historical paradigms--from primitive Christianity's apocalyptic paradigm, to the post-modern ecumenical paradigm, including the Hellenistic, medieval-Roman-Catholic, Reformation-Protestant, Counter-Reformation Catholic, Protestant-Orthodox, and Modern-Enlightenment paradigms. Salient images of the church within each of these historical paradigms and movements accompanying them.
- THL 736 Systematic Theology According to Karl Rahner (3) OD**
Theological methodology of one of the premier Catholic theologians of the twentieth century: Karl Rahner's thought as foundational for much of contemporary Roman Catholic theology. Topics include: the human family and its relationship to mystery (Sin and Grace); the theology of symbol--how the mystery of grace is worked out in our material world (Christology and Ecclesiology); and the life of Grace -- the work of the Holy Spirit in our social liberation (Prayer, Discernment, and Ethics).
- THL 737 The Historical Context for Theology in America (3) OD**
Examination of forces that have influenced Catholic theological thought in the United States. Topics that may be explored include denominationalism, church-state relations, civil religion, evangelicalism, fundamentalism, gender, nativism, the African-American experience, Native American experience, Judaism, trusteeism, immigration, social justice, etc.
- THL 740 Inventing Christianity: The Emergence of the Christian Theological Tradition (3) OD**
Course explores development of early Christian theological tradition from its apostolic foundations through the Council of Chalcedon emphasizing four themes: the origin and development of the Christian empire, the search for the Christian doctrine of God, understanding the God-Man, Augustine and his influence.

- THL 744 Christian Social Ethics (3) OD**
(764) Introduction to the major alternative modes of thought and action by which Christians have sought to express concern for social and political issues. Stress on the social dimension of Christian ethics.
- THL 746 Justification and Justice: Jewish, Protestant and Catholic Models (3) OD**
Different Models of divine intervention into human life lead to different models of human response. The center of gravity for this course will be the doctrine of justification. Under examination will be the ways in which contemporary theologians articulate the social and political response engendered by the divine initiative in modern life. Four responses come into play: self-transcendence (Niebuhr and Metz), obedience (Ramsey and NCCB), discipleship (Yoder), and dialogue (Buber).
- THL 752 The Sacraments of Initiation (3) OD**
Study of the anthropological roots, historical formation, and interrelation of the three traditional moments in Christian Initiation: Baptism, Confirmation and Eucharist, in light of the new Rite of Christian Initiation of Adults (R.C.I.A.) as basic text, of official Catholic Church pronouncements, of the Lima Document of the World Council of Churches, and of various contemporary theologies.
- THL 753 Liturgy and Time (3) OD**
Reflection on the temporal nature of Christian life by study of the historical formation and sacramental dimensions of the liturgical (a) day, (b) week, and (c) year. Topics include: meaning of Christian celebration, origins of Christian daily prayer (the Divine Office), Christ's presence in the Church through liturgical memorial, Sunday and the weekly cycle, the Easter and Christmas cycles, the feast day as Christian sacrament, the Sanctoral Cycle, the reforms of Vatican II, the ethical significance of the liturgical year.
- THL 756 Theology of the Moral Life (3) OD**
(761) Elements of Christian moral experience and understanding, as well as the criteria of Christian moral judgment and action.
- THL 758 Roman Catholic and Protestant Ethics (3) OD**
(763) Ethical approaches of leading European and American Catholic and Protestant ethicists: Rahner, Janssens, Gustafson, Ramsey, Fletcher, Grisez and McCormick.

Christian Life Studies

- THL 760 Scriptural Foundation of Christian Spirituality (3) S**
(701) Introduction to Scripture, especially the New Testament, as the foundation to all Christian Spirituality. Faith, prayer, Holy Spirit, Church, centrality of Christ.
- THL 761 Liturgical Foundations of Christian Spirituality (3) S**
An exploration of the Church's liturgical prayer life as an important basis and foundation for Christian Spirituality.
- THL 764 Prayer and Christian Spirituality (3) S**
Using classical and contemporary texts in Christian Spirituality, course studies the theology, methods, stages and dynamics of personal prayer and mysticism.
- THL 765 Prayer, Intimacy, and True Christian Growth (3) S**
The connection between spiritual and human growth, the necessity of keeping a relationship with Christ, and concrete simple ways of doing it each day.
- THL 766 Contemplation in the Christian Tradition (3) S**
Course examines approaches to contemplation in classical and contemporary texts. Among authors and texts studied are the following: Pseudo-Dionysius, Cloud of Unknowing, Meister Eckhart, Teresa of Avila, John of the Cross. P: CSP 764 (710) or CSP 765 (711) or equiv.
- THL 769 The History of Christian Spirituality (3) S**
(781) Development from post-apostolic age to the present. Some of the classics of Christian Spirituality.
- THL 770 Called to Holiness: The Christian Vocation (3) S**
Saints, ways to sanctity, past and present. The Communion of Saints. **NOTE:** This course fulfills the requirement for a course in the history of spirituality.

- THL 773 The Theology of the Spiritual Exercises of St. Ignatius (3) S**
Theology, interpretations, commentators, structure, with practical applications. Students will draw greater benefit from this course if they have a prior experience of the Spiritual Exercises either in an individually directed silent retreat or an extended retreat in daily life.
- THL 776 Discernment of Spirits: Theory and Practice (3) S**
(782) Study of the tradition of discernment in the Church with special emphasis on the rules for discernment of spirits in the Spiritual Exercises and the application of these to Christian life and practice.
- THL 778 Biblical Roots for Peace and Justice Ministry (3) S**
How to use Scripture responsibly in approaching the social and planetary issues of the third millennium. Sample topics: creation and ecology, violence and nonviolence, hunger and stewardship, conscience and civil authority, option for the poor. Opportunity for special issue study.
- THL 779 Spirituality and Social Concerns (3) S**
Social teachings of the Church on current issues of peace and justice. Integration with prayer and ministry.
- THL 786 Family Spirituality (3) S**
Designed for both those who are familed and those who minister to families. Key questions: What are the elements of a spirituality derived from within the experience of family? What is the relationship between such a spirituality and the classic traditions of Christian spirituality?
- THL 787 Feminist/Womanist Theologies for Spirituality (3) S**
A survey of recent feminist theory and its implications for selected topics in Christian theology and spirituality. The focus of theological exploration will be concepts of God; the human person, sin and salvation; and Christology.
- THL 789 Spirituality for Americans: Thomas Merton's Contemplative Vision (3) OD**
(784) The relevance of Merton for contemporary American spirituality. Merton in context of the American experience: his life, writing and thought as guidelines for living the Gospel today. Special attention to themes of True Self, Contemplation and Non-violence.
- THL 792 Practicum in Ministry (3) OD**
Supervised experience in a practical ministry of the student's choice in consultation with the Program Director.
- THL 793 Directed Independent Readings (3) OD**
To be arranged.
- THL 795 Directed Independent Study (3) OD**
To be arranged.
- THL 797 Directed Independent Research (3) OD**
To be arranged.
- THL 799 Master's Thesis**

FACULTY

Note: The year appearing in parentheses after the academic rank and official position indicates the beginning of service in Creighton University. The second date, if given, indicates the year of appointment to present rank.

- PETER W. ABEL, *Associate Professor of Pharmacology* (1987); *Associate Professor of Pharmaceutical Sciences* (1993).
B.S. Pha., University of Wisconsin, 1973; Ph.D., West Virginia University, 1978.
- THOMAS E. ADRIAN, *Professor of Biomedical Sciences: Physiology* (1989).
M.L., Institute of Biology (England), 1974; M.Sc., Brunel University (England), 1976; Ph.D., Royal Postgraduate Medical School (England), 1980.
- DEVENDRA K. AGRAWAL, *Associate Professor of Medicine* (1985; 1992); *Associate Professor of Medical Microbiology and Immunology* (1995)
B.Sc., Lucknow University (India), 1971; M.Sc., 1973; Ph.D. (Biochemistry), 1978; Ph. D., (Medical Sciences), McMaster University (Canada), 1984.
- MARLENE J. AITKEN, *Associate Professor of Occupational Therapy* (1992).
B.A.O.T., University of Iowa, 1958; M.A.M.S., University of Illinois at Chicago, 1980; Ph.D., 1992.
- JOSEPH G. ALLEGRETTI, *Professor of Law* (1989); *Assistant Director for Law and Religious Ethics, Creighton Center for Health Policy and Ethics* (1989).
B.A., Colgate University, 1974; J.D., Harvard Law School, 1977; M.Div., Yale Divinity School, 1989.
- ROBERT F. ALLEN, *Professor of Economics and Finance* (1987); *Chair, Department of Economics and Finance* (1987).
B.A., Creighton University, 1962; M.A., University of Missouri at Columbia, 1963; Ph.D., Michigan State University, 1969.
- MICHAEL P. ANDERSON, *Assistant Professor of Chemistry* (1989).
B.A., University of Minnesota-Duluth, 1967; M.S., Michigan Technological University, 1969; Ph.D., University of Minnesota-Minneapolis, 1983.
- ROBERT J. ANDERSON, *Associate Professor of Medicine* (1985); *Associate Professor of Biomedical Sciences; Biochemistry* (1992).
M.D., Northwestern University Medical School, 1973; M.S., University of Minnesota, 1981.
- RICHARD V. ANDREWS, *Professor of Biomedical Sciences: Physiology* (1958; 1972); *Dean Emeritus, Graduate School* (1995).
B.S., Creighton University, 1958; M.S., 1959; Ph.D., University of Iowa, 1963.
- DONALD R. BABIN, *Professor of Biomedical Sciences: Biochemistry* (1967; 1989).
B.S., University of New Brunswick (Canada), 1958; Ph.D., 1962.
- GEOFFREY W. BAKEWELL, *Assistant Professor of Classics* (1994).
B.A., Yale University, 1986; Ph.D., Brown University, 1994.
- GUY R. BANVILLE, *Professor of Marketing* (1982); *Dean of the College of Business Administration* (1982-94); *Dean Emeritus, College of Business Administration* (1994).
B.S.C., The University of Alabama, 1960; M.S.C., 1961; Ph.D., 1969.
- DONALD J. BAUMANN, *Professor Emeritus of Chemistry* (1944-46; 1951; 1981).
B.S., University of Detroit, 1943; M.S., Creighton University, 1944; Ph.D., Iowa State University, 1952.
- KATHERINE BECKER, *Adjunct Instructor in Education* (1988).
B.A., Boston University, 1973; M.A., University of Denver, 1975.
- GORDON N. BERGQUIST, *Professor of English* (1956; 1987).
B.A., University of Notre Dame, 1954; M.A., Marquette University, 1956; Ph.D., University of Nebraska, 1972.
- DALE R. BERGREN, *Associate Professor of Biomedical Sciences: Physiology* (1985).
B.A., Carroll College (Montana), 1973; M.S., 1975; Ph.D., University of North Dakota, 1976.
- JOHN M. BERTONI, *Professor of Neurology* (1989); *Professor of Biomedical Sciences: Neurobiology* (1992); *Professor of Pharmacology* (1993).
A.B., Xavier University, 1967; M.D., University of Michigan, 1971; Ph.D., 1979.

- AGAINDRA K. BEWTRA, *Associate Professor of Medicine* (1975; 1980); *Associate Professor of Biomedical Sciences: Cell and Developmental Biology* (1992).
M.B.S., All India Institute of Medical Sciences (India), 1967; M.D., 1973.
- BIERMAN, *Associate Professor of Pharmacology*, (1996).
- MARVIN J. BITTNER, *Associate Professor of Medical Microbiology and Immunology* (1981; 1991); *Associate Professor of Medicine* (1981; 1991).
B.S. University of Chicago, 1972; M.D., Harvard University, 1976.
- CHARLES BOCKMAN, *Assistant Professor of Pharmacology*, (1996).
Ph.D., (Pharmacology) Creighton University, (1993).
- BARBARA J. BRADEN, *Professor of Nursing* (1974; 1990); *Dean, Graduate School* (1995).
B.S.N., Creighton University, 1973; M.S., University of California at San Francisco, 1975; Ph.D., University of Texas at Austin, 1988.
- KATHLEEN C. BRANNEN, *Associate Professor of Management* (1979; 1985).
B.S.B.A., Xavier University, 1965; M.B.A., Creighton University, 1970; Ph.D., University of Nebraska-Lincoln, 1979.
- WILLIAM H. BRANNEN, *Professor of Marketing* (1967; 1979).
B.S.B.A., Creighton University, 1958; M.B.A., Michigan State University, 1959; D.B.A., 1966.
- PHILIP R. BRAUER, *Assistant Professor of Biomedical Sciences: Cell and Developmental Biology* (1990); *Associate Professor of Biomedical Sciences* (1996).
B.S., University of Wisconsin, 1977; Ph.D., Medical College of Wisconsin, 1985.
- MICHAEL A. BROWN, *Assistant Professor of Philosophy* (1987).
B.A., Carroll College (Montana), 1979; M.A., University of Notre Dame, 1981; Ph.D., Emory University, 1987.
- LAURA L. BRUCE, *Assistant Professor of Biomedical Sciences: Neurobiology* (1987); *Associate Professor of Biomedical Sciences* (1996).
B.A., Cornell College, 1975; Ph.D., Georgetown University, 1982.
- MARY T. BUTTELL, *Lecturer in Education* (1985).
B.A., Creighton University, 1977; M.A., 1979.
- NEIL CAHILL, S.J., *Assistant Professor of Economics* (1962; 1965); *Jesuit Chaplain, College of Business Administration* (1983).
B.S.C., Creighton University, 1943; B.A., St. Louis University, 1947; M.A., 1950; Ph.L., 1950; S.T.L., 1958; M.Div., Creighton University, 1977; D.Min., San Francisco Theological Seminary, 1991.
- SUSAN CALEF, *Assistant Professor of Theology*, (1996).
B.A., Marymount College, 1977; M.A., Catholic Theological Union, (1988); Ph.D., Notre Dame, (1995).
- JOHN C. CALVERT, *Assistant Professor of History* (1994).
B.A., University of Alberta (Canada), 1979; M.A., University of Toronto, 1981; M.A., McGill University (Canada), 1984; Ph.D., 1993; D.I.P., American University in Cairo, 1988.
- GREGORY I. CARLSON, S.J., *Associate Professor of Classics and Modern Languages* (1979; 1989); *Chair, Department of Classics and Modern Languages* (1993).
Classical B.A., St. Louis University, 1965; M.A., 1966; M.Div., Jesuit School of Theology (California), 1974; D.Phil., Heidelberg University, 1972.
- JAMES W. CARLSON, *Associate Professor of Mathematics* (1985; 1991); *Director of the Graduate Program in Mathematics* (1990).
B.S., Southwestern College, 1977; M.S., Pittsburgh State University, 1979; Ph.D., Purdue University, 1985.
- EDWARD A. CARUSI, *Associate Professor of Biomedical Sciences; Biochemistry* (1968; 1989).
B.A., University of California at Los Angeles, 1950; M.A., 1952; Ph.D., 1957.
- STEPHEN J. CAVALIERI, *Associate Professor of Medical Microbiology and Immunology* (1987; 1994); *Associate Professor of Pathology* (1986; 1994).
B.S., California University of Pennsylvania, 1977; M.S., 1979; Ph.D., West Virginia University, 1981.
- EDWARD A. CHAPERON, *Associate Professor of Medical Microbiology and Immunology* (1968; 1971).
B.S., LeMoyné College, 1957; M.S., Marquette University, 1959; Ph.D., University of Wisconsin-Madison, 1965.

- STEPHEN A. CHARTRAND, *Professor of Medical Microbiology and Immunology* (1986; 1994);
Professor of Pediatrics (1986; 1994).
B.S., University of Kansas, 1971; M.D., 1975.
- SHIH-CHUAN CHENG, *Associate Professor of Mathematics* (1979; 1985); *Coordinator of Statistics Program* (1985); *Chair, Department of Mathematics/Computer Science* (1991).
B.S., National Cheng-Chi University (Taiwan), 1970; M.S. (Mathematics), Utah State University, 1974; M.S. (Statistics), Florida State University, 1976; Ph.D., 1978.
- MICHAEL G. CHERNEY, *Associate Professor of Physics* (1989; 1994).
B.S., Marquette University, 1975; M.S., University of Wisconsin-Madison, 1980; Ph.D., 1987.
- I-SHIEN CHIEN, *Associate Professor of Management* (1987; 1992).
B.S., Taiwan University, 1975; M.B.A., Western Illinois University, 1981; M.A., University of Kansas, 1984; Ph.D., 1987.
- CHRIN, *Adjunct Instructor in Physics* (1996).
- ROBERT J. CHURCHILL, *Assistant Professor of English* (1980); *Professor of English* (1996).
B.A., Creighton University, 1966; M.A., 1970; Ph.D., University of Nebraska-Lincoln, 1979.
- SHEILA M. CICIULLA, *Assistant Professor of Nursing* (1973; 1978); *Associate Dean, Undergraduate Program, School of Nursing* (1989).
B.S.N., Creighton University, 1955; M.S.N., University of Nebraska, 1977; M.Ed., Creighton University, 1977; Ed.D., University of Nebraska-Lincoln, 1988.
- SAM J. CIPOLLA, *Professor of Physics* (1969; 1983); *Director of Graduate Program in Physics* (1981).
B.S., Loyola University (Chicago), 1962; M.S., Purdue University, 1965; Ph.D., 1969.
- JERRY E. CLARK, *Associate Professor of Sociology* (1976; 1982).
B.A., Westmar College, 1964; M.A., University of Wisconsin-Madison, 1966; Ph.D., University of Kentucky, 1974.
- TERRY DEE CLARK, *Assistant Professor of Political Science* (1993).
B.S., United States Military Academy, 1973; M.A., University of Illinois at Urbana-Champaign, 1988; Ph.D., 1992.
- THOMAS F. COFFEY, *Associate Professor of Modern Languages* (1977; 1983).
B.A., Catholic University of America, 1969; M.A., 1972; Ph.D., 1974.
- KATHLEEN R. COLLINS, *Assistant Professor of English* (1991).
B.S., University of North Dakota, 1976; M.A., 1977; Ph.D., 1985.
- JOHN M. CONLON, *Professor of Biomedical Sciences: Biochemistry* (1989).
B.Sc., University of Newcastle (England), 1969; Ph.D., University of Sussex (England), 1972.
- CORA A. CONNER, *Lecturer in Modern Languages* (1980).
B.A., Augustana College (South Dakota), 1961; M.A., University of Nebraska-Lincoln, 1966.
- TIMOTHY J. COOK, *Assistant Professor of Education* (1996).
B.A., John Carroll University, 1980; M.Ed., Boston College, 1987; Ph.D., Boston College, 1990.
- CLIDIE B. COOK, *Assistant Professor of Teaching* (1996).
B.S., Southern University, 1952; M.A., Ohio State University, 1965; Ed.D., University of Nebraska-Lincoln, 1994.
- DOMINIC COSGROVE, *Professor of Otolaryngology* (1992); *Professor of Pharmacology* (1993).
Assistant Professor of Biomedical Sciences: Molecular Biology (1992).
Ph.D., University of Nebraska Medical Center, 1989.
- MARIE-DOMINIQUE CRAPON DE CAPRONA, *Adjunct Associate Professor of Biomedical Sciences* (1993).
- ROBERT O. CREEK, *Professor of Biomedical Sciences; Physiology* (1964; 1989).
B.S., University of Illinois at Urbana-Champaign, 1950; M.S., University of Southern Illinois, 1955; Ph.D., Indiana University-Bloomington, 1960.
- CRAWFORD, *Assistant Professor of Political Science and International Studies* (1996).
- RANDALL L. CRIST, *Assistant Professor of Mathematics* (1993).

- B.S., University of Nebraska, 1982; M.A., University of Pennsylvania, 1987; Ph.D., Texas A & M University, 1993.
- WILLIAM F. CUNNINGHAM, JR., *Professor of English* (1978); *Dean, College of Arts and Sciences* (1978-86); *Academic Vice President* (1987-93); *Special Assistant to the President* (1993); *Dean Emeritus, College of Arts and Sciences* (1994).
B.A., Holy Cross College, 1954; M.A., Boston College, 1956; Ph.D., University of Pittsburgh, 1961.
- ELIZABETH A. DAHL, *Associate Professor of Psychology* (1971; 1983).
B.A., Tabor College, 1956; M.S., Kansas State Teachers College, 1969; Ph.D., University of Nebraska-Lincoln, 1977.
- ARTHUR F. DALLEY, *Professor of Biomedical Sciences: Clinical Anatomy* (1974; 1992).
B.S., University of Utah, 1970; Ph.D., 1975.
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B.S., University of Jadavpur (India), 1981; M.S.Pharm., 1983; Ph.D., University of Minnesota, 1990.
- R. GARY DEAN, *Associate Professor of Accounting* (1977).
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- JEAN DEMARTINIS, *Assistant Professor of Nursing* (1990).
B.S., Ball State University, 1977; M.A., 1978; Ph.D., University of Texas at Austin, 1991.
- CHARLES T. DICKEL, *Professor of Education* (1976; 1989); *Chair, Department of Education* (1995).
B.A., Whitman College, 1968; M.S., Indiana University-Bloomington, 1971; Ed.D., 1973; Graduate Certificate in Gerontology.
- DENNIS R. DIXON, *Adjunct Assistant Professor of Education* (1988; 1992).
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- DAVID DOBBERPUHL, *Assistant Professor of Chemistry* (1994).
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- EDWARD A. DOMINGUEZ, *Assistant Clinical Professor of Medicine* (1992); *Assistant Clinical Professor of Medical Microbiology and Immunology* (1992).
B.A., Rice University, 1982; M.D., Baylor College of Medicine, 1986.
- ROBERT DORNSIFE, *Assistant Professor of English* (1992).
B.A., Shippensburg State College, 1986; M.A., Pennsylvania State University, 1988; Ph.D., Lehigh University, 1992.
- ARTHUR B. DOUGLAS, *Associate Professor of Atmospheric Sciences* (1982); *Chair of the Department* (1982).
B.A., University of California at Riverside, 1971; M.A., University of Arizona, 1973; Ph.D., 1976.
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B.A., Maryknoll Seminary, 1961; D.D.S., Creighton University, 1969; Ph.D., Baylor University, 1975.
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- DUNLAY, *Assistant Professor of Pharmacology* (1995).
- DAVID L. DWORZACK, *Professor of Medical Microbiology and Immunology* (1980; 1992); *Professor of Medicine* (1980; 1992).
B.A., Washington University, 1969; M.D., University of Kansas, 1973.

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B.A. Macalester College, 1978; M.A., Georgia State University, 1987; Ph.D., Duke University, 1992.
- DAVID J. ELLISON, *Associate Professor of Accounting* (1981).
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- BETTE N. EVANS, *Associate Professor of Political Science* (1975; 1985).
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- FIDEL FAJARDO-ACOSTA, *Associate Professor of English* (1993).
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- JAMES A. FLANERY, *Associate Professor of Journalism and Mass Communication, (1995); Chair, Department of Journalism and Mass Communication* (1995).
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- RANDOLPH M. FEEZELL, *Professor of Philosophy* (1977; 1992).
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- FRANK M. FERRARO, *Professor Emeritus of Medical Microbiology and Immunology* (1946; 1979).
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- LAURA L. FINKIN, *Assistant Professor of Psychology* (1996).
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- HOWARD E. GENDELMAN, *Clinical Professor of Medical Microbiology and Immunology* (1994).
M.D., Pennsylvania State University, 1969; M.A., Indiana University, 1971; Ph.D., Oklahoma State University, 1984.
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B.S., Harvey Mudd College, 1982; Ph.D., University of Wisconsin-Madison, 1988.
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B.S., University of Kentucky, 1967; M.D., 1971.
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B.A., Nebraska State teachers College (Wayne), 1951; M.S., 1958; Ed.D., University of Nebraska-Lincoln, 1966.
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B.A., Saint Louis University, 1961; M.A.T., 1964; Ph.L., 1964; S.T.L., 1969; M.A., 1969; Ph.D., Catholic University of America, 1973.
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B.S., University of Minnesota, 1976; Ph.D., Mayo Graduate School of Medicine, 1983.
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B.A. Sogang Jesuit University (Korea), 1966; M.B.A., Creighton University, 1971; Ph.D., University of Minnesota, 1976.
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B.A., University of South Carolina, 1986; Ph.D., Duke University, 1992.
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B.A., University of California at Los Angeles, 1973; M.D., Creighton University, 1978.
- BRUCE HOUGH, *Assistant Professor of Journalism*(1974); *Director of Center for Instructional Technology* (1974).
B.A., Western Illinois University, 1965; M.A., Indiana University, 1969; Ph.D., University of Nebraska-Lincoln, 1983.
- MARTIN R. HULCE, *Associate Professor of Chemistry* (1991).
B.S., Butler University, 1978; M.A., Johns Hopkins University, 1980; Ph.D., 1983.
- STEPHEN P. HUTCHENS, *Associate Professor of Marketing* (1981; 1987); *Chair, Department of Management, Marketing, and Systems* (1988).
B.S.B.A., University of Arkansas at Fayetteville, 1964; M.B.A., Drury College, 1978; Ph.D., University of Arkansas at Fayetteville, 1981.
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B.S., University of Scranton, 1980; M.S., Philadelphia College of Pharmacy and Science, 1982; Ph.D., 1985.
- GAIL M. JENSEN, *Associate Professor of Physical Therapy* (1993).
B.S., University of Minnesota, 1973; M.A., Stanford University, 1978; Ph.D., 1987.
- ROBERT R. JOHNSON, *Associate Professor of Finance* (1984; 1992); *Professor of Finance* (1995).

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B.S.C., Madras Christian College (India), 1976; M.B.A., University of Western New Mexico, 1978; Ph.D., University of Arkansas, 1985.
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B.S. Pha., North Dakota State University, 1964; M.S., University of North Dakota, 1969; Ph.D., 1971.
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B.S., Loyola University of Los Angeles, 1961; Ph.D., University of Notre Dame, 1966.
- CHARLES T. KESTERMEIER, S.J., *Assistant Professor of Modern Languages* (1994).
B.A., St. Louis University, 1968; M.A., 1969; Ph.D., University of Wisconsin-Madison, 1982.
- MANZOOR M. KHAN, *Associate Professor of Pharmaceutical and Administrative Sciences* (1990).
B.S., University of Karachi (Pakistan), 1970; M.S., 1972; M.S. (Biology), University of Bridgeport, 1975; Ph.D., University of Arizona Health Sciences Center, 1980.
- DONALD B. KIMMEL, *Professor of Medicine* (1985; 1992); *Professor of Biomedical Sciences: Cell and Developmental Biology* (1988; 1993); *Clinical Professor of Periodontology* (1986; 1992).
D.D.S., University of Maryland at Baltimore, 1972; Ph.D., University of Utah, 1975.
- FRANCIS M. KLEIN, *Associate Professor of Chemistry* (1968; 1973).
B.S., Kings College (Pennsylvania), 1963; Ph.D., University of Cincinnati, 1986.
- JOSEPH A. KNEZETIC, *Assistant Professor of Biomedical Sciences: Molecular Biology* (1991).
B.S., Bowling Green State University, 1981; Ph.D., University of Cincinnati, 1986.
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B.A., Defiance College, 1966; M.S., University of Dayton, 1969; Ph.D., University of Tennessee Center for the Health Sciences, 1974.
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B.S., Iowa State University, 1981; B.A., 1984; Ph.D., 1989.
- BEVERLY J. KRACHER, *Assistant Professor of Business Ethics and Society* (1990).
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- GERALD T. KRETTEK, S.J., *Assistant Professor of Philosophy* (1989).
B.A., St. Louis University, 1975; M.A., Ph.L., 1977; Ph.D., 1987.
- JACK L. KROGSTAD, *Professor of Accounting* (1980; 1985); *John P. Begley Endowed Chair in Accounting* (1980).
B.S., Union College, 1967; M.B.A., University of Nebraska-Lincoln, 1971; Ph.D., 1975; C.P.A., Texas, 1976.
- THOMAS A. KUHLMAN, *Associate Professor of English* (1967; 1970).
B.A., Xavier University (Ohio), 1961; M.A., Brown University, 1963; Ph.D. 1967.
- MARY V. KUNES-CONNELL, *Assistant Professor of Nursing* (1980; 1982); *Coordinator, Mental Health/Psychiatric Nursing* (1983); *Associate Professor of Nursing* (1995).
B.S.N., Creighton University, 1977; M.S.N., University of Nebraska, 1979; Ph.D., 1991.
- JOAN M. LAPPE, *Associate Professor of Nursing* (1984; 1993).
B.S.N., University of Nebraska Medical Center, 1981; M.S., Creighton University, 1985; Ph.D., University of Nebraska Medical Center, 1992.
- LYNETTE M. LASHLEY, *Associate Professor of Journalism and Mass Communication* (1991).
B.A., Georgetown University, 1975; M.A., University of Wisconsin-Madison, 1978; Ph.D., Northwestern University, 1988.

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B.S., National University (Ireland), 1955; Diploma in Education, 1957; B.D., Pontifical Gregorian University (Rome), 1961; S.T.L., 1963; Diploma, International Catechetical Centre (Belgium), 1968; Ph.D., Aquinas Institute of Theology, 1975.
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B.S.N., University of Nebraska, 1975; M.S.N., 1979; Ph.D., University of Nebraska Medical Center, 1993.
- GARY K. LEAK, *Associate Professor of Psychology* (1979; 1985).
B.S., University of Washington, 1971; Ph.D., University of Nebraska-Lincoln, 1975.
- BRIAN F. LE BEAU, *Associate Professor of History* (1983; 1990); *Director, Creighton Center for the Study of Religion and Society* (1989); *Coordinator, American Studies Program* (1993); *Chair, Department of History* (1996).
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- TOM D. LEWIS, *Associate Professor of Accounting* (1981; 1985).
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B.S., Kansas State University, 1986; Ph.D., Creighton University, 1992.
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Ph.D., M.S., Jozef Attila University (Hungary), 1982; Ph.D., 1985.
- ARLENE R. LUNDQUIST, *Assistant Professor of Psychology* (1994).
B.A., University of North Carolina, 1978; M.A., Wake Forest University, 1987; Ph.D., University of Wisconsin, 1993.
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B.A., St. Francis College (Wisconsin), 1956; S.T.L., Pontifical Antonian Atheneum (Rome), 1964; S.S.L., Pontifical Biblical Institute (Rome), 1966; S.T.D., Studium Biblicum Franciscanum (Jerusalem), 1967; S.T.D. (hon.), University of St. Andrew, Scotland, 1995.
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B.Sc., University of Toronto, 1967; M.S., University of Manitoba, 1972; Ph.D., Colorado State University, 1977; M.B.A., University of Nebraska-Lincoln, 1980.
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B.S., Creighton University, 1971; M.D., 1975.
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B.A., University of Haifa (Israel), 1971; M.A. (Jewish History), 1975; M.A. (Religion), Duke University, 1978; Ph.D., The Hebrew University of Jerusalem (Israel), 1994.
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